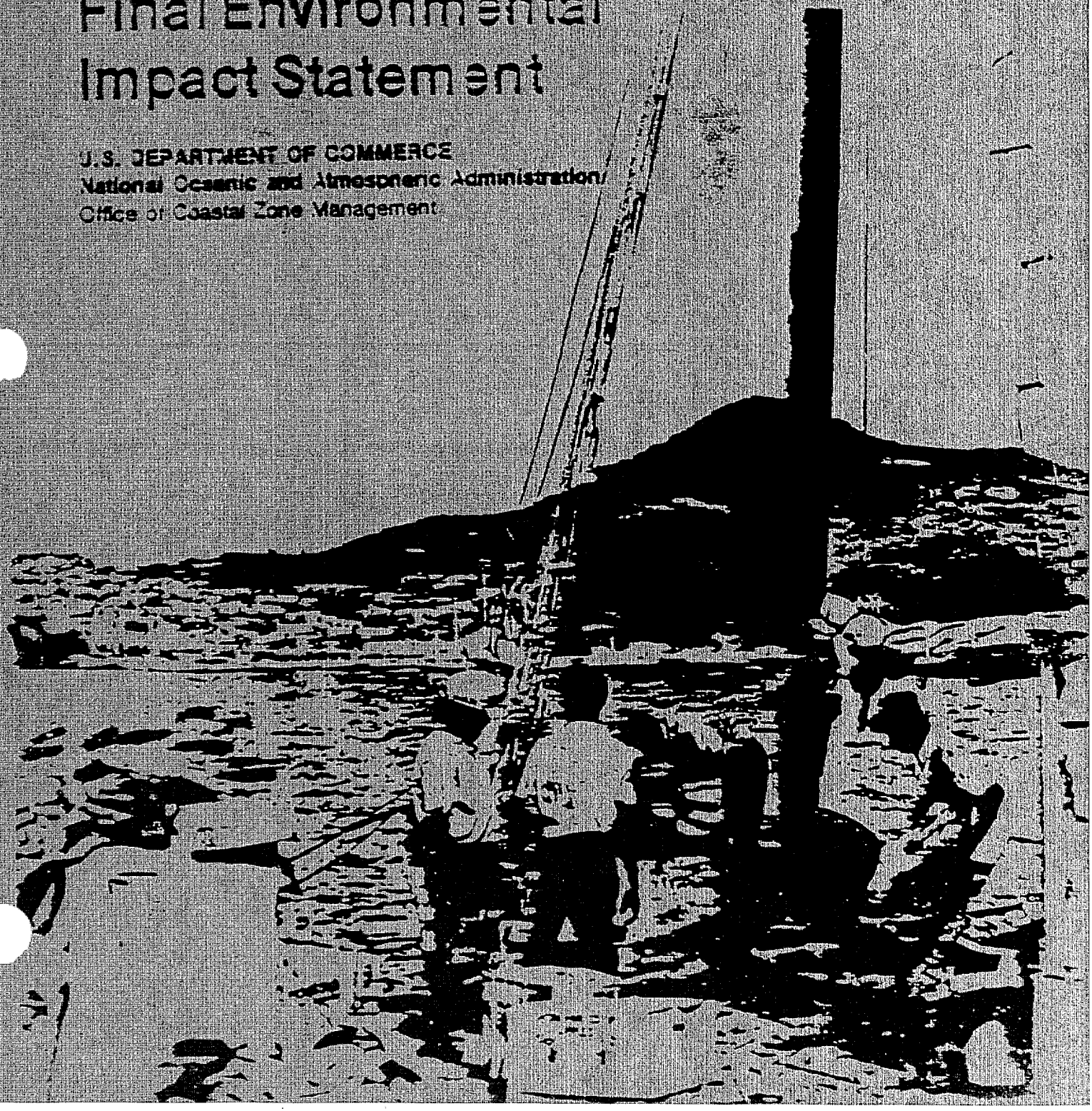
The Virgin Islands Coastal Management Program and Final Environmental Impact Statement

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management



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DEPARTMENT OF COMMERCE

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FINAL

ENVIRONMENTAL IMPACT STATEMENT

PROPOSED COASTAL ZONE MANAGEMENT PROGRAM FOR THE VIRGIN ISLANDS

Prepared by:

Office of Coastal Zone Management
National Oceanic and
Atmospheric Administration
U.S. Department of Commerce
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

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Summary

( ) Draft Environmental Impact Statement (X) Final Environmental Impact Statement

Department of Commerce, National Oceanic and Atmospheric Administration, Office of Coastal Zone Management. For additional information about this proposed action or this statement, please contact:

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1. Proposed Federal approval of the Virgin Islands Coastal Management Program

   (X) Administrative ( ) Legislative

2. It is proposed that the Secretary of Commerce approve the Coastal Management Program application of the Virgin Islands pursuant to P.L. 92-583. Approval would permit implementation of the proposed program, allowing program administration grants to be awarded to the State, and require that Federal actions be consistent with the program.

3. Approval and implementation of the program will restrict or prohibit certain land and water uses in parts of the Virgin Islands coast, while promoting and encouraging development and use activities in other parts. This may affect property values, property tax revenues, and resource extraction of exploration. The program will provide an improved decision-making process for determining coastal land and water uses and siting of facilities of national interest and will lead to increased long-term protection of and benefit from the State's coastal resources.

4. Alternatives considered:

   A. Federal - The Secretary of Commerce could delay or deny approval under the following condition:

      1. If Federal agency views were not adequately considered or the program does not meet the requirements of the Coastal Zone Management Act.

   B. State

      2. The State could withdraw the approval application and continue program development or attempt to use other sources of funding to meet the objectives of the State's management program.

      3. The State could amend the coastal management program.

5. List of all Federal, State, and local agencies and other parties from which comments have been requested:

   Federal

   Advisory Council of Historic Preservation
   Council on Environmental Quality

Other Parties

National Interest Groups

Environmental Groups
- American Littoral Society
- American Shore and Beach Protection Association
- Center for Law and Social Policy
- Environmental Defense Fund, Inc.
- Environmental Policy Center
- Friends of the Earth
- Izaak Walton League
- National Audubon Society
- Natural Resources Defense Council
- National Wildlife Federation
- Nature Conservancy
- Sierra Club
- The Conservation Foundation
- The Wildlife Management Institute
- Wilderness Society

Professional
- American Fisheries Society
- American Institute of Architects
- American Institute of Planners
- American Society of Planning Officials
- National Parks and Conservation Association

Public Interest
- Council of State Planning Agencies
- Coastal States Organization
- League of Women Voters of the United States
- National Association of Counties
- National Association of Regional Councils
- National Conference of State Legislatures
- National Governors' Conference
- National League of Cities
- United States Conference of Mayors

Private Sector
- American Association of Port Authorities
- American Farm Bureau Federation
- American Mining Congress
- American Petroleum Institute
- American Right of Way Association
- American Waterways Operators
- Atomic Industrial Forum
- Boating Industry Association
- Chamber of Commerce of the United States
- Chevron Oil Company
- Edison Electric Institute
- EXXON
- National Association of Conservation Districts
- National Association of Electric Companies
- National Association of Engine and Boat Manufacturers
- National Association of Home Builders
- National Association of Realtors
- National Association of State Boating Law Administration
- National Boating Federation
- National Canners Association
- National Coalition for Marine Conservation, Inc.
- National Environmental Development Association
- National Farmers' Union
- National Federation of Fishermen
- National Fisheries Institute
- National Fisheries Institute
- National Forests Products
- National Ocean Industries Association
- National Recreation and Park Association
- National Security Industrial Association
- National Waterways Conference

Department of Agriculture
Agriculture Research Service
Agricultural Stabilization and Conservation Service
Forest Service
Soil Conservation Service
* Department of Commerce
Department of Defense
Air Force
* Army Corps of Engineers
Navy
Department of Health, Education, and Welfare
Public Health Service
Department of Housing and Urban Development
* Department of the Interior
Bureau of Land Management (public lands)
Bureau of Mines
Bureau of Outdoor Recreation
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
Keeper of the National Historic Register
National Park Service
Office of Oil and Gas
Department of Justice
Department of State
Department of Transportation
* Coast Guard
Federal Aviation Administration
Federal Railroad Administration
Transport and Pipeline Safety
Department of Treasury
Assistant Secretary for Administration
Energy Research and Development Administration
Environmental Protection Agency
Federal Energy Administration
Federal Power Commission
General Services Administration
* Marine Mammal Commission
National Aeronautics and Space Administration
Nuclear Regulatory Commission
U.S. Water Resources Council

State/Local

Government of the Virgin Islands
A-95 Clearinghouse
P.O. Box 5138
St. Thomas, V.I. 00801

Dr. Robert Dill, Director
West Indies Laboratory
Farleigh Dickinson University
Box 4010
C'sted, St. Croix, V.I. 00820

Island Resources Foundation
P.O. Box 4187
St. Thomas, V.I. 00801

V.I. Conservation Society
c/o David Grigg, President
Island Resources Foundation
P.O. Box 4187
St. Thomas, V.I. 00801

Caribbean Research Institute
c/o College of the Virgin Islands
St. Thomas, V.I. 00801

St. Croix Board of Realtors
C'sted, V.I. 00820

Mobil Oil Corporation
Saltwater Sportsmen
Society of Real Estate Appraisers
Sport Fishing Institute
United Brotherhood of Carpenters and Joiners of America
Western Oil and Gas Association
World Dredging Association

Individuals
Upon request, copies have been and will be sent to all individuals and other interested parties
* J. K. Thomas
* William S. Beller
* Bruce G. Potter

* Denotes comments received on the Draft Environmental Impact Statement

6. The Draft Environmental Impact Statement made available to the Council on Environmental Quality and the public on August 5, 1977. The Final Environmental Impact Statement made available to the Council on Environmental Quality on September 13, 1977.

7. The final EIS was prepared based on oral/written comments received at the public hearings held on August 30 and 31, 1977, and comments submitted in response to a request for comments. A total of interested parties submitted written comments and were distributed as follows:

Federal Agencies.....5
State Agencies.....n/a
Local Governments.....0
Other Parties.....4

Attachment 1 is the proposed Virgin Islands Coastal Zone Management Act of 1977. When the legislation is passed the Office of Coastal Zone Management will forward a copy of the Act to all recipients of the Final Environmental Impact Statement.

Attachment 2 is the full text of the written comments received by OCZM. This attachment has been forwarded to individuals and organizations who have made comments. Additional copies of the written comments will be distributed by OCZM on request.

SUMMARY OF COMMENTS TO VIRGIN ISLANDS DRAFT EIS

Comment:	Response:
Bruce G. Potter August 25, 1977	
Program should not be approved because the proposed program does not meet the requirements of the CZMA. Specifically, the proposed program is deficient in "a determination of land and water uses which have a direct and significant impact on coastal waters and which will be managed." By implication the proposed program will deal with the elements of water use by means of the Trustland Occupancy and Alteration Act, the Open Shoreline Act, and the Oil Spill Prevention Act. The adequacy of these mechanisms is not examined in the proposed program. Their combined authorities do not extend to the kind of general water use regulation required by the CZMA. Most water uses are transitory, and require study and regulation. There are two sources of peril to the coastal waters and shoreline. (1) the pressures on water use created by both the density of land population and increasing use of water areas; and (2) the risk of oil spill contamination.	For purposes of program approval, the VICZMP meets the rules and regulations of the CZMA. Specifically the program controls the water uses/hazards described through the control of access to and use of the water by land use regulation, water pollution control standards, and the implementation of the Oil Spill Prevention Act.
William S. Beller August 23, 1977	
Favorably impressed with the proposed program and the DEIS. Feels the program should consider the probable effects of the proposed 40-mile pipeline from Fajardo, P.R. to St. Thomas.	The proposed pipeline will be laid to St. Croix not St. Thomas. The effects of this new water supply can be addressed through refinements in the program if the proposal becomes a reality.
In view of the seriousness of erosion, natural slopes should be retained, and in some cases rebuilt.	The planning element which will address the erosion problem is not completed yet, but will be completed before October 1, 1978 as prescribed by law.
Enforcement of laws will be difficult, at best. The Attorney General has been reluctant to prosecute conservation and land-use cases. Enforcement is important, should be funded adequately, and should have public accountability.	Enforcement of the VICZMA will be carried out by a Bureau of Enforcement which will be created administratively within the Division of Coastal Zone Management (in DCCA). Furthermore, OCZM must monitor the implementation and enforcement of the program's policies, and will terminate funding if enforcement is inadequate.
The CZM Program should (1) identify the projected use of Mangrove Lagoon; and (2) state a consistent and aggressive plan for ensuring such use. A method for keeping small but cumulative impacts highly visible should be proposed.	Use of mangrove areas in general is dealt with in Chapter Five, Table 5.2, Priority of Use Matrix, which indicates a high priority for preservation. The coastal land and water use plan as set forth in Chapter Five of the program and Section 905 of the VICZMA designates much of the Mangrove Lagoon in particular for preservation. Chapter Seven, Areas of Particular Concern, this reiterates this position on use. OCZM feels that this approach constitutes a consistent plan for ensuring such use. The management program constructs a framework for enforcement, the working procedures of which will be detailed in the forthcoming rules and regulations.

Comment	Response
David H. Wallace Associate Administrator for Marine Resources NOAA	
Pages 34-35 (West Indian Company, Ltd) The statement should add that, not withstanding the 1972 memorandum, dredging and filling in Long Bay and elsewhere in the Islands, will require permits.	Permits will be required for this activity.
Page 50(6). The NMFS also has responsibilities for review and comment under the Fish and Wildlife Coordination Act.	This statement is correct and NMFS comments will be considered also by DCCA.
Page 50(8). The Federal government, through the NMFS will regulate fishing within 3-200 nautical miles of the territory.	The correction has been noted and will not conflict with the VICZMP.
Page 51(10). The NMFS also joins FWS in working through the Acts and executive orders so described in the second sentence of this paragraph.	See above comments.
Page 51(11). Add the Marine Mammal Protection Act of 1972 to the list of Federal Statutes applicable in the territory.	This statute does apply to the territory, but was not included in the list of example statutes because the VICZMP will not affect its jurisdiction.
Page 85(11). Current efforts by NMFS and the government of the V.I. to designate Sandy Point on St. Croix as critical habitat for leather-back sea turtles could be listed as an example of emerging environmental policies.	No response necessary.
Page 79 (Table 5.1). Suggest that the table reflect either direct and significant impacts, or issues, but not both. Included on this page under "water circulation" are the following:	The purpose of the matrix is to demonstrate which uses and activities will have a direct and significant impacts on certain characteristics of coastal matters. All uses occurring in the first tier are subject to the management program.

Land Based Uses

heavy industry (it can pump huge quantities of water)
roads (fills, bridges, culverts, etc. can influence circulation)

Water Based Uses

heavy industry (can impact sedementation and water quality)
mining (can impact water pollution and water circulation)

Construction Activities

filling (can impact water quality, water circulation, littoral erosion and accretion)
shore stabilization (can impact water quality, water circulation, littoral erosion and accretion)
excavation (can impact water quality)
site clearing (can impact water quality, littoral erosion and accretion)
blow out (can impact water quality)

(David Wallace continued)

Comment	Response
Page 81, Table 5.2. This table more clearly describes reasonable use priorities than earlier editions. Due to the values of grass beds/algal plains, coral reefs/algal ridges, and offshore islands and cays to recreational.and traditional light reassigned first or second priorities rather than third priorities or none at all.	These redesignations were made in the Draft EIS.
Page 85, Marine Meadows (Grass Beds). In addition to including re-establishment of bottom conditions favorable to natural regeneration we recommend that project designs include provisions for replanting seagrasses if necessary to assure habitat repalcement.	This will be considered by DCCA in reviewing project applications.
APPENDIX E	
Coastal Environments Pages E-4 to E-5	
Importance of sandy beaches for endangered species should be highlighted. Recent investigations in St. Croix *June 1977) showed that virtually all sandy beaches are suitable to nesting sea turtles. Hawkbills may also clamber over rocky areas to nest on fringing sandy areas such as on Davis Beach. Leatherbacks were particularly concentrated at Sandy Point on the western end of the Island. Other beaches on St. Croix with turtle nesting include Jacks Bay, Buck Island, Davis Beach, Canegarden Bay, Green Cay and along the north shore. In the draft's numerous discussions of the value of beaches, their importance as nesting areas for these rare, threathened, or endangered species should be included. Similarly, inclusion of management and planning safeguards to discourage human interference with turtles should be one of the primary goals in the sections on beach inventories, beach evaluations, and recommended critical areas. NMFS recently initiated action to declare 0.8 miles of Sandy Point Beach as emergency critical habitat to protect the endangered leatherback. NMFS has taken this action because this beach hosts the most known leatherback nesting in the western Atlantic and Caribbean north of the Guianas in South America. Although this beach is designated as an area of particular concar, because of its extreme importance to sea turtles we recommend that it be placed in a preservation category, at least along the portions of the beach known to provide valuable nesting habitat.	The proposed land and water use conservation category should be adequate to insure protectio of these areas when coupled with the program policies relating to endangered species. The expanded enforcement efforts should insure human interference with endangered species will be discouraged and nesting activities safeguarded.
GLOSSARY	
Unnumbered page Endangered Specied--NMFS/NOAA responsibilities under Endangered Species Act should be identified along with those of U. S. Fish and Wildlife Service.	This addition has been made.

Comment	Response
John R. Twiss, Jr. Executive Director Marine Mammal Commission	
The waters of the Virgin Islands between mean high tide and the three mile territorial limit, designated as "Open Water" in the Program includes habitat for the humpback whale (Megaptera novae-anglia), the Atlantic bottlenose dolphin (Tursiops truncatus), the spinner dolphin (Stenella longirostris), the spotted dolphin (Stenella frontalis), the minke whale (Balaenoptera acutorostrata), the sperm whale (Physetter catadon), the short finned pilot whale (Globicephala macrorhynchus), Cuvier's beaked whale (Ziphius cavirostris), and probably the common dolphic (Delphinus delphis). The endangered humpback whale is identified on Page 21 of the document as a species dependent upon the coastal zone, but the document contains no other mention or discussion of the impacts of the proposed Program upon the humpback whales or other species of marine mammals.	Appropriate changes have been made in the FEIS.
Development guidelines are not provided for the Open Water habitat of the species on Pages 82-86 of the document, although Open Water is designated in Table 5.2 (Page 81) to be used for heavy industry, utilities, solid waste disposal, recreation, mining, port facilities, national defense, and fishing.	OCZM feels that the Program policies in the legislation, in particular those related to endangered species, provide a basis for management of the Open Water environments indicated by the next comment.
The broad goals and policies expressed in Section 902(b) (1), 905(a) (2) (A), and elsewhere in the proposed Virgin Islands Coastal Zone Management Act of 1977 are basically consistent with the goals and policies of the Marine Mammal Protection Act in the sense that they would allow for marine mammal protection and conservation consistent with the Act. The legislation has not yet been passed by the Virgin Islands legislature and the status of the legislation and, consequently, the Program should be discussed in the document. It is not clear how the broad language of the legislation will be implemented in specific, predictable actions as part of the Program that may affect the protection and conservation of marine mammals. This involves the basic issue of whether it is possible to assess the environmental impact of a proposed action in the absence of either specific policies and criteria or detailed information about proposed actions.	See next response.
Table II of Appendix B, Page B-13, identifies permits for taking or importing marine mammals under the Marine Mammal Protection Act as among the licenses and permits to be subject to the Federal consistency provisions. The text on Page B-9 indicates that applicants for such licneses or permits will be required to obtain a certification of compliance with the Program. How is the impact of this requirement to be evaluated? Under what circumstances and based upon what criteria will the Division of Coastal Zone Management object to an applicant's certification statement?	This permit has been deleted from the list of permits subject to certification for consistency.
The language on Page B-8 states that the final Virgin Islands consistency provisions will be issued pursuant to the final rules and regulations	The consistency requirements are adequately described in the Federal CZMA. The VICZMP has been developed in view of the proposed

(John Twiss continued)

Comment	Response
issues by the Office of Coastal Zone Management. Such rules and regulations were published in the Federal Register, in proposed form, for comment on 29 August 1977 and will not be finalized until after 28 October, the last day comments may be submitted. Under these circumstnaces, we are uncertain as to how we are to evaluate the Program and its impacts upon marine mammals.	regulations and will be revised if there are changes in the final consistency regulations.
In light of the uncertainties concerning the Federal consistency provision of Section 307(b) of the Coastal Zone Management Act and the effect that approval of the Program would have upon the conduct of ongoing activities and decisions under the Marine Mammal Protection Act, we feel that additional information must be provided for consideration. Any approval of the Program in the absence of such information and a resolution of question about the relationship between the provisions of Federal law affecting marine mammals and those of the Program should not be deemed to have any effect upon that realtionship or to any way constitute a determination that the provisions of the Marine Mammal Protection Act do not apply with full force and effect to marine mammals within the coastal zone of the Virgin Islands.	See above comment.
Drake Wilson Brigadier General Deputy Director of Civil Works Office of the Chief of Engineers Corps of Engineers Department of the Army	
The description of the jurisdiction of the Corps Section 404 regulatory program on Pages 49 and 50 is too restricted and does not accurately reflect the Corps Regulations, as set forth in 33 CFR 323.2. Also, Section 404 prohibits the discharge of dredged or fill material into all navigable waters, their tributaries, whether navigable or not, and the adjacent wetlands unless the activity is authorized by a permit issued by the U. S. Army Corps of Engineers. The requirement for such a permit also extends to coastal and freshwater wetlands and natural lakes greater than five acres.	The description of the Corp permits and regulations are not intended to be detailed and comprehensive. The section merely serves as a summary guide. Any discussion of freshwater wetlands and natural lakes is irrelevant in the Virgin Islands context.
The CZM Program cites the islands in their entirety as the coastal zone. It then designates first and second tiers. The two tiers are subjected to different permitting processes and requirements. The Corps questions whether this is in compliance with 15 CFR 923.11 which states "the policies, objectives and controls called for in the management program must be capable of being applied consistently within the area."	
The Corps repeated the same complaint that they referred to in coordination and review, above.	
On Page ix of the program, national interest in the siting of facilities is listed as not complete. There is question as to whether a program may be given approval if one of the specific requirements of the CZMA is not complete.	Page ix -- As of the DEIS that element is not complete. The process of integrating DEIS comments into the Final EIS constitutes completion of that element.

(Drake Wilson continued)

Comment	Response
The EIS indicates that this requirement is not complete. The Corps requests that their field office be allowed to participate in this activity and that the resulting document be submitted for review.	Shore Erosion Planning. As part of the continuing consultation and coordination on the Corps may participate in this process.
Page 38. The Corps references a document they have completed entitled "National Shoreline Study."	No response necessary.
Page 32, paragraph 2, lines 5 and 6, delete "approval is pending" and add "issued a permit 4 October 1976 for offshore terminal."	
Page 34, paragraph 1, lines 6 and 7. Delete "Project approval--is pending," as the application has not been received.	
Pages 34 and 35, paragraph 7: The proposal of the West Indian Company, Ltd., for filling of 29 acres requires a Department of the Army permit under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Federal Water Pollution Control Act Amendments of 1972. The permit application is pending and an EIS is in preparation.	Page 32, 34, 35, 49, 115 -- The appropriate changes have been made.
Page 49, add after paragraph 2: "(3) Section 103 of the Marine Protection Research and Sanctuaries Act of 1972 (86 Stat. 1052, 33 U. S. C. & 1413) authorized the Secretary of the Army to issue permits for the transportation of dredged material for the purpose of dumping into ocean waters."	
Page 115, paragraph 6(b), line 7: Delete "approval is pending" and add "issued a permit for offshore terminal 4 October 1976."	
Page 115, paragraph 6(c): The extensive alteration of the former Krause Lagoon area by the unauthorized dredging and filling of Martin Marietta may result in either voluntary restoration or legal action by the U. S. Army Corps of Engineers to compel restoration. The Corps of Engineers has issued a cease and desist order to halt further filling of the Lagoon.	No response necessary.
Page 37. The Corps feels there is a sometimes critical water supply problem on St. Thomas. Congress has authorized a water supply study for the Virgin Islands which will consider a water pipeline from Puerto Rico to St. Thomas. It seems that a significant dependable increase in water supply, especially if subsidized, could induce or encourage an increase in development which could significantly impact the coastal zone.	Page 37 -- Both OCZM and the Virgin Islands Planning Office have been recently made aware of this proposed project. The Program is flexible enough to deal with this issue during program implementation, including consideration of a joint Puerto Rico/Virgin Islands Section 308 Interstate Planning Grant to analyze impacts of such a program.
Page 40. The Corps suggests citing the National Shoreline Study mentioned above.	This study will be used when the shoreline erosion element is prepared in the upcoming year.
The following should also be included: A report entitled Flood Plain Information, Tidal Areas, St. Thomas, St. Croix, and St. John, U. S. Virgin Islands, was prepared for the Virgin Islands Planning Office by the Jacksonville District Corps of Engineers in 1975. The study	See above comment.

(Drake Wilson continued)

Comment	Response
provided information on potential tidal flooding to the U. S. Virgin Islands including determination of the 100-year and Standard Project Flood elevations. The study did not provide solutions to the flood problems; however, it did furnish a suitable basis for the adoption of land use controls to guide flood plain development and thereby prevent intensification of the tidal flood loss problems.	
The report states that "Lands leased or otherwise utilized by the U. S. Government are included within the coastal zone." (Page 68) This is incorrect. Leased federal lands are also excluded from the coastal zone.	This is correct and the FEIS has been revised to reflect the new wording.
Norman H. Huff Commander, U. S. Coast Guard Department of Transportation	
The document does not appear to clearly identify Coast Guard programs as high priority uses in the coastal zone. The majority of Coast Guard programs are water dependent and must carry a high priority.	By reference, the VICZMP had identified: National defense as a category is a high priority within the VICZMP and therefore anything done in the nation's defense is a high priority.
The Coast Guard's role in national defense is an essential element of the national interest.	
The Coast Guard's future acquisition of coastal areas is in the national interest.	
The Coast Guard's use of vital offshore operating areas should not be unduly restricted in the future.	There is nothing in the VICZMP which unduly the Coast Guards use of offshore areas.
Under "Excluded Federal Lands" (Page 68) -- The statement "Lands leased or otherwise utilized by the U. S. Government are included within the oastal zone" should be eliminated. The U. S. Attorney General's office rendered an opinion which includes leased and non-fee controlled land, as well as Federally owned land.	This statement is correct and the FEIS had been changed to reflect the Attorney General's language.
Page 81, Table 5-2--Bridges should be listed with roads under transportation and given an appropriate priority listing.	Page 81, Table 5-2 -- There are no bridges in the Virgin Islands.
Page B-7, Table I--Under number 5, Preservation of Life and Property, the Coast Guard should be included as the cognizant Federal agency responsible for maritime search and rescue operations.	Page B-7, Table I -- The Substance of the program acknowledges the role of the Coast Guard as the agency responsible for maritime search and rescue operations. This addition will be in the subsequent revisions to the program document.
Page B-12. Of concern are the Coast Guard's responsibilities regarding the issuance of permits for bridges and rpivate aids to navigation. The CZM Program appears to have omitted the details of how Federal permitting is to be implemented regarding CZM certification.	Page B-12 -- The Coast Guard has responsibility for bridges under 33 USC 401, 491-507 and 5-5-534. The Federal Consistency section Page B-8, and Chapter 8 Page 142 Figure 8.2 and Page 144 indicates the details of the relationship between Federal permitting and CZM certification. Further clarification will be promulgated by the V. I. Department of Conservation and Cultural Affairs. Copies of which will be sent to all relevant Federal agencies as part of the continuing consul-

(Norman Huff continued)

Comment	Response
	tation and coordination process.
It is recommended that the time frame for (Territorial) comments or issuance of CZM certification be defined as either sixty days or that Federal permits be issued conditional upon the issuance of CZM certification from the State, to avoid unnecessary delay.	See above comment. Every effort will be made to reduce administrative review time for consistency determinations.
Page B-10 and 11. (a) Coast Guard Light Station St. Thomas is located on 9.4 acres rather than 6.0. (b) Charlotte Amalie Coast Guard Light Attendant Station is located on ½ acre owned and ½ acre on permit from the local government has been omitted. (c) Ft. Louise Augusto Light is located on 0.1 acre at St. Croix and has been omitted. (d) Ham's Bluff Light Station is located on 22.5 acres rather than 16.5.	Pages B-10 and 11 and Appendix C-1. This information has been acknowledged and appropriate revisions will be made.
Appendix C-1. The Coast Guard Light Station at Buck Island is a 100° square parcel on use permit from the U. S. Department of the Interior.	
It is suggested that provisions be incorporated into the plan for evaluating noise impacts and providing abatement, if necessary.	Any existing or future federal noise control standards will be enforced by the territorial agencies implementing the VICZMP.
Actions for protecting the coastal environment from the spillage of hazardous materials should be considered. The agencies responsible for spill cleanup (i.e. local firefighting or civil defense agencies should be educated in the safe handling of hazardous materials.	The existing Oil Spill Prevention Act contains adequate provisions for protecting the environment and will be funded under the CZMA, Section 306 and 308 funds.
Appendix B, Pages B-10, 11. (a) Coast Guard Light Station St. Thomas is located on 9.4 acres rather than 6.0. (b) Charlotte Amalie Coast Guard Light Attendant Station located on ½ acre owned and ½ acre on permit from the local government has been omitted.	These changes have been made in the FEIS.
The plan in general appears to be well tailored for the Virgin Islands' coastal zone. Most of the major issues have been addressed in a satisfactory manner.	No response necessary
The potentially devisive consistency issue has been treated in direct and forthright manner. If the guidance suggested on Page 99 is followed, conflicts over consistency shall be minimal.	No response necessary.

Comment	Response
Ted Heintz Office of the Secretary U.S. Department of the Interior September 6, 1977	
- The Department has no objection to the proposed two tier boundary approach. Although the first tier is composed of a relatively narrow strip of land along the shoreline, we are pleased that this tier also includes all offshore islands and cays, excluding those owned by the Federal government. In general, we support the criteria and rationale used for including areas within the first or second tier of the CZM boundary. We also commend the Territory for their decision to include the remaining interior portions of the three main islands in the second tier.	- No response necessary.
- The section on Boundary Definition needs amplification with regard to lands excluded from the coastal zone. The Bureau of Outdoor Recreation does not own or manage any land but does administer the Land and Water Conservation Fund which provides monies to purchase outdoor recreation land and facilities on a matching grant basis.	- The exclusion of Federal lands from the coastal zone is treated with greater depth in Appendix 8. Virgin Islands Federal Interaction.
- It is our understanding that both existing and new properties purchased through our grant program are subject to the general coastal zone review and planning process at the state level--our grant lands are not Federal exclusions. However, it should be noted that the Land and Water Conservation Fund Act of 1965, Public Law 88-578, includes the provision in Section 6(f) that "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses."	- No response necessary.
- The Department is pleased that the nineteen land and water areas in the first tier that are designated as Areas of Particular Concern, eleven are specifically designated as areas for preservation and restoration.	- No response necessary.
- The Department has serious reservations regarding the proposed specific recommendations for those APC's located in industrial and commercial areas. Since the boundary delineations and management procedures for each APC will be developed under Section 306 work task funds, we believe it would be more appropriate for the specific recommendations to be developed after all alternative management procedures have been considered and evaluated. Furthermore, implementation of many of the proposed specific recommendations in these development-oriented areas will necessitate the applicant obtaining a Corps of Engineers' Section 10 or 404 permit. The Department is mandated, through the Fish and Wildlife Coordination Act, as amended, to review such permit applications and to submit a report to the Corps on the impact of the proposed project on public fish and wildlife resources. In this capacity, we have the following reservations concerning the specific recommendations for Crown Bay,	- For purposes of clarification the recommendations for areas of particular concern are guidelines for future development. They are not mandatory and will be subject to further refinement during implementation of the VICZMP. As suggested many of the recommendations, if implemented will require a section 10 or 404 Corps of Engineers permit and/or an environmental impact statement. At that time it will be appropriate for the FWS to comment on the merits of each particular proposal. The approval of the program in no way diminishes this review function of the FWS.

Comment | Response

U.S. Department of the Interior (cont.)

Vessup Bay-East End, Enighed Pond-Cruz Bay and Southshore Industrial Area:

Crown Bay (pp. 121 - The program recommends that the redevelopment plan suggested by the Port Authority be endorsed. This plan presents three options for this APC, all of which call for filling areas of between 29 and 59 acres. Although we recognize the specific problems of the Crown Bay area, we believe the potential of developing a more environmentally acceptable plan exists.

Vessup Bay - East End (pp. 125) - The recommendation for this APC specifies utilizing the mangrove-fringe salt pond adjacent to the ferry dock for expanded boating facilities. The discussion also states that the bay is quickly becoming overcrowed, yet the specific recommendation states that the expansion of boating facilities should be encouraged. Not only does this appear inconsistent, but no rationale is presented for the recommendation. No mention is made of detailed scientific studies which document the fish and wildlife resources or productivity of the area, or of potential alternative expansion sites. This is in direct contrast to Departmental policy. We believe that a specific recommendation for development and/or management of Vessup Bay-East End should be developed only after: (1) investigations which indicate the specific needs of the area; (2) identification of all alternative actions/projects for the area; (3) evaluation of the impacts of all alternatives.

Enighed Pond - Cruz Bay (pp. 127) - The specific recommendation for this APC states that the general concepts of the proposed master plan suggested by the Port Authority should be endorsed. We believe that a more environmentally acceptable plan can be developed for this area and would be pleased to work with the Virgin Islands Planning Office in developing such a plan.

Southshore Industrial Area (pp. 115) - In the discussion of this APC seven major specific projects are addressed and numerous potential adverse environmental impacts may be associated with these projects. In view of these impacts, we believe the recommendation for this APC is too general and weak. Specific recommendations should be developed for each of the seven proposed projects after alternatives to the projects habe been evaluated.

In view of these concerns, we believe that endorsement of these recommendations at this time might lead to potential conflicts among Territorial and Federal agencies during the final planning and implementation stages of these projects. It is also apparent to us that implementation of some of the specofic recommendations for these areas may

Comment | Response

U.S. Department of the Interior (cont.)

also necessitate preparation of an Environmental Assessment or an Environmental Impact Statement in accordance with the National Environmental Policy Act.

Thus, we believe that endorsement of the specific recommendations at this time, prior to evaluation of all alternatives for the proposed development-oriented projects, is premature and negates the purpose and value of early coastal planning and management. For all of the reasons stated above, we believe that the specific recommendations for these four projects should be deleted from the draft program at this time, and they should be developed through a Section 306 task which would accomplish the following actions:

(1) boundary delineation* for each APC;
(2) consideration and evaluation of all alternative actions for management and/or development of the APC;
(3) development of specific tangible management procedures* for each APC; and
(4) development and presentation of very specific recommendations for each APC.

*Although we understand from the Office of Coastal Zone Management that the boundary delineations and management procedures will be developed through Section 306 work tasks, we believe the VICZMP should clearly specify that this will be accomplished.

Another satisfactory alternative to us would be for the program to specify that these recommendations are "specific suggestions for management."

In addition to the above concerns we have the following comments on some of the other APCs:

Fort Louise Augusta - Altona Lagoon-Gallows Bay (pp. 112-113) - The last sentence of the recommendation for this APC is slightly awkward and misleading. We suggest it be reworded as follows: "Tidal flushing of Altona Lagoon should be restored by improving water flow between the lagoon and bay."

Green Cay (pp. 114) - The U.S. Fish and Wildlife Service is presently in the process of negotiating purchase of Green Cay since the cay serves as critical habitat for the endangered St. Croix ground lizard, Ameiva polops. In the event that monies would not be released for service acquisition of Green Cay, we would endorse the recommendation of the program that the cay remain in its present undeveloped state and be included in the Territorial Park System.

Sandy Point (pp. 117) - Endangered sea turtles are known to nest on Sandy Point beaches,

Comment	Response
and we believe the recommendation should address this fact. The recommendation currently states that this area should be managed for conservation, recreation and traditional uses. The term "traditional uses" must be defined in order that such uses will be clarified and will not be incompatible with conservation uses.	
- West Indian Company and Vicinity (pp. 118-119) - The U.S. Fish and Wildlife Service is currently in the process of obtaining the Solicitor's opinion of how this portion of the CZM program related to the Memorandum of Understanding between the Department of the Interior, the Virgin Islands government, and the West Indian Company. We habe requested the Solicitor to clarify the implications of Federal consistency for each pariticpant of this memorandum. We believe that clarification is necessary before VICZMP approval is issued.	- OCZM sees no compelling reason for withholding approval.
Frenchtown and Vicinity (pp. 120) - The severe upland runoff problem in the Frenchtown vicinity should be included in the areas which warrant attention in the recommendation.	
- We suggest that VICZMP include a mechanism for coordination with Federal agencies who have an interest in the coastal zone, in the selection process of any future APC's. Furthermore, in the U.S. Fish and Wildlife Service letters to the Virgin Islands Planning Office dated March 16, 1977, and July 25, 1977, we recommend that the list of site specific APC's be expanded to include Protestant Cay and Ruth Island, St. Croix as areas for preservation and restoration (APR).	- Through the continuing consultation and coordination mechanisms, Federal agencies will have an opportunity for input into future APC/APR designations. The VIPO will consider APC/APR nominations as part of its continued planning program under Section 905 of the VICZMA.
- Protestant Cay comprises an area of approximately four acres, of which approximately two acres have been developed. The endangered St. Croix ground lizard is known to occur on the cay, and this Service has formally designated the cay as critical habitat for the lizard since Protestant Cay and Green Cay are the only two places in the world where the lizard is known to occur. In consideration of potential development pressures on the cay, we reiterate our earlier recommendation.	- No response necessary. See above comment.
- Ruth Island was created from dredge spoils of Hess Oil Virgin Islands Corporation. We request that the Virgin Islands Planning Office investigate the feasibility of designating Ruth Island as an APR. Mangroves could possible be established there to help restore the south ecosystems of St. Croix. The Krause Lagoon area was heavily impacted by the activities of Hess Oil Virgin Islands Corporation and Martin-Marietta Alumina.	- These comments will be taken into consideration in future designations of APRs.
As a minimum, we recommend that a 306 task be developed to evaluate the feasibility of designating these areas as APC's in the near future.	

Comment	Response
U.S. Department of the Interior (cont.)	
Additionally, we recommend that the list of designated Areas of Particular Concern should include all sites located within the first tier which are nominated to, or listed on, the National Register of Historic Places, and those sites recommended to, or eligible for, or listed on the Registry of Natural Landmarks. Such sites have national as well as local significance and merit specific protective management attention.	
- The Department believes Tables 5.1 and 5.2 do not accurately reflect the goals, policies and guidelines of the management program. Table 5.1 should be expanded to include the many direct and significant impacts which were omitted. Using the program's definition of direct and significant impacts, we have identified at least eighteen more impacts, and fourteen of these impacts fall under the "construction" heading of the table. For example, filling will result in "direct" and "significant" impacts on water quality and water circulation, and dredging results in a "direct" impact on socioeconomic characteristics (i.e., dredging accomplished to facilitate commercial port needs). In accord with Section 305 (b)(5) of the Coastal Zone Management Act, Table 5.2 (page 81) proposes priority of use designations for thirteen distinct coastal environments of the Virgin Islands. This table also needs to be significantly revised to adequately reflect the goals and policies, particularly since this table has the potential of being used as a basis for decision-making in program implementation. Although Table 5.2 includes uses relating to thirteen coastal environments, the program only gives textual attention to eleven of these environments. The program also fails to discuss policies relating to open water, urban developed or industrial areas. This table also indicates that grass beds and algal plains serve as a second priority use area for mariculture. Although the VICZMP states that all mariculture will be "carefully controlled," we believe that the potential stresses which mariculture could place on these delicate, fragile, ecological systems have not been adequately considered and evaluated prior to the proposed use designation. Mariculture can increase levels of organics in the water which coulc cause severe algal blooms resulting in a depletion of the available oxygen in the water. This, in turn, could result in massive fish and coral die-off. In view of this and the delicate balance and ecological value of submerged algal plains and grass beds, we recommend, as a minimum, that these areas be designated as third priority areas for mariculture. In addition, we believe it is imperative that the program identify what is meant by "carefully controlled mariculture." Mariculture restrictions regarding what may oor may not be done should be established. Although it is our understanding that the Department of	- Both Tables 5.1 and 5.2 were used in developing the list of uses subject to the management program and developing priorities. In that sense they are "process" more than "product." The goals, policies, guidelines, and the land and water use classifications represent a refinement of this concept. The tables have been placed in the document to better illustrate the bredth and historical development of the program development process. The inclusion of the tables in the VICZMP is not for the purposes of program implementation decisions. Any rules or regulations promulgated by DCCA will be available to Federal agencies for their review and comment.

Comment	Response
U.S. Department of the Interior (cont.)	
Conservation and Cultural Affairs (DCCA) will establish rules and regulations covering this issue, we believe the program should mention these pending regulations.	
Table 5.2 also lists artificial reef construction as a first priority of use in both grass bends/algal plains and coral reef/algal ridges coastal environments and as a second priority for sand bottoms. While the Department would not object to a deepwater (i.e. deeper than 35 feet) artificial reef on a sparsely-vegetated bottom, we would strongly object to artificial reef construction on productive shallow-water seagrass/algal flats, and healthy coral reefs. Thus, we feel that a sand bottom should receive first priority for artificial reefs, and grassflats and coral reefs should receive, at most, third priority for this use.	
The use category "Mining (extraction)" is basically concerned with the extraction of sand for construction material in the Virgin Islands. According to Table 5.2, first priority for extraction is listed as "open water" while second priority is given to extraction on "sand bottoms." The text should first attempt to clarify what is meant by "open water" and then explain why extraction is not a first priority on a sand bottom.	
In view of these concerns and the potential basic uses of these tables in program implementation, we urge that both Table 5.1 and 5.2 must be revised and updated prior to final program approval.	
The program should include an on-going means to monitor and determine the capability of the coastal resources to support the particular designated uses, including the cumulative impacts of such uses. We recommend that this be accomplished through a Section 306 work task which, in essence, would be a continuation of the "Capability Analysis" study which took place during program development. It is realistic to assume that a designated permissible use may result in a cumulative, adverse impact on the coastal ecosystem, and a modification of the priority use designation would be necessary as a part of program administration. The program fails to clearly indicate how such changes, if necessary, would be made.	
- In addition to the goals, policies and permissible usses, the VICZMP also presents guidelines for development in specific coastal environments. These guidelines will serve as a basis for developing the rules and regulations relevant to the new coastal permit system and necessary zoning revisions. Our comments on the guidelines follow:	- These comments have been acknowledged and will be considered in the development of rules and regulations.
Beaches - We recommend that these guidelines specify that all sand beaches should be conserved for recreational or wildlife purposes. Since many beaches in the Islands serve as nesting habitat for endangered sea turtles,	

Comment	Response
U.S. Department of the Interior (cont.)	
we believe certain beaches should be given high priority for preservation or conservation.	
Marine Meadows (grass beds) - Our earlier comments on mariculture are also applicable here. We also recommend that if anchorage areas are designated in marine meadows, the guidelines should clearly state that no waste discharge or polluting substances of any kind should be permitted into these areas.	
Coral Reefs and Algal Ridges - Our comments on mariculture are particularly applicable here.	
- One of the key elements of the VICZMP is the Coastal Land and Water Use Plan which is basically a comprehensive plan for development within the first tier of the coastal zone boundary. The program's goals, policies, and priorities of use designations formed the basis for the plan which identifies nine land and water use categories ranging from preservation to industrial.	- The comment for further study as a 306 task is being considered. The land water use plan will be refined within the next year with zoning and the proposed land and water use system being made compatible.

Comment	Response
- We specifically commend the Territory for development and adoption of a streamlined yet comprehensive coastal permit system to aid in implementation of the program. The rearrangements of the Territorial Legislative regimes and creation of a Bureau of Enforcement for operation of the CZM Program appear workable.	- No response necessary.
- However, we have some serious concerns and questions regarding the functions of the newly designated Virgin Islands Land Use Appeals Board (p. 149). The VICZM draft program states that the Board of Zoning, Subdivision and Building Appeals has been redesignated the Virgin Islands Land Use Appeals Board, but the program neglects to specify who will comprise the members of this Board, whether any citizens are represented on the Board, whether the members are elected or appointed, and whether the present regulations of the existing board (as explained on page 29 of the program) remain effective. This Board is empowered to affirm, reverse or modify the Commissioner of the Department of Conservation and Cultural Affair's determination of the type of permit needed or the Commissioner's decision on any permit. We believe these issues must be clarified for several reasons. First, since any appeals of Board decisions are taken directly to the Virgin Islands District Court, the citizens and any public or private agency should be well aware of the functions of the Board. Secondly, we are interested in who comprises the members of the Board, particularly since the Land Use Appeals Board appears to be simply a redesignation of an existing appeals board in the Department of Public Works. If the Department of Public Works was a construction oriented agency, then environmental considerations may not be fully pursued in decision-making. We, therefore, request that our concerns be addressed in the final VICMP.	- The VILUAB is made up of citizens appointed by the Governor. The regulations remain effective unless otherwise stated by the Legislation.
- We believe a weakness in the proposed draft is the failure to address Territorial and Federal agency interaction and coordination during and after program implementation. The Department would appreciate the opportunity to work with the Territory in the development of the 306 work program. We also suggest that a mechanism should be available for Federal agencies, who have an interest in the coastal zone, to work closely with the Virgin Islands Planning Office in their evaluation of future APCs and in evaluating the effectiveness of the program.	- A summary description of past Federal interaction is in Appendix B of the DEIS. The 306 work program will contain a specific work task oriented toward continued interaction with the Federal agencies. We appreciate DOI's continued interest and will apprise DCCA of your willingness to work with them in evaluating future APCs. The evaluation of the program as a whole is a responsibility of OCZM as mandated in Section 312 of the CZMA of 1972, as amended.
- Finally, we believe an apparent oversight in the draft program is the omission of a mechanism for conflict resolution should conflicts arise between any of the coastal goals and/or policies. We recommend that such a mechanism be clarified in the final VICMP.	- A mechanism is provided in Section 902(3) of the legislation.
- The Virgin Islands Coastal Management Act's goals and policies are the major determinants regarding permissible uses in the coastal zone. However, the program contains no methods or procedures for analyzing the impacts of the uses on the natural environment. This aspect should be addressed in the final VICMP.	- Criteria or parameters by which impacts of activities will be judged will be developed as part of the rules and regulations after passage of the legislation.

Comment	Response
- The draft program indicates that since there will be a limited number of Federal activities and projects in the Virgin Islands coastal zone, direct notification by Federal agencies to the Division of Coastal Zone Management (DCZM) is the preferred method of notification (p. B-9). We strongly recommend that the DCZM establish and operate a notification system whereby all Territorial and Federal agencies will be notified of all Federal activities processed through this system. This should result in enhanced coordination and planning efforts by agencies directly and indirectly involved in coastal management planning.	- OCZM cannot require that such a notification system be set up. However, we will note this comment to DCCA for their consideration in implementing the consistency provisions of the program.
- The draft VICMP is weak in addressing Territorial and Federal interaction and coordinationg during and after program implementation. This interaction, particularly with respect to Federal agencies who have an interest in the coastal zone, would benefit the CZM program through open communication between Territorial and Federal agencies regarding enforcement matters, Federal consistency, and comprehensive planning for development projects in the coastal zone. Thus, we strongly urge the Territory to explicitly address coordination with Federal agencies in the final program.	- A summary description of past Federal agency interaction appears in Appendix B of the DEIS. As stated before, the 306 work program will contain a specific work task oriented toward continued interaction with Federal agencies.
- The Outer Continental Shelf Lands Act should be added to the List of Legislation, outlining Federal jurisdiction affecting the Territory's coastal zone (reference p. 51). The VICMP does not have any clear policy concerning possible mineral extraction activities on the OCS, although it does state in the appendix, on p. B-9, the procedures an applicant must follow to start Territorial consistency review.	- The OCS Lands Act legally affects the Territory's coastal zone but it was not included in the list of significant statutes because there are no existing or proposed OCS activities for the areas adjacent to the Virgin Islands. For this reason, the VICMP does not include any policies concerning OCS mineral extraction activities.
- The procedures of the Territory for processing the applicant's consistency statement have not been set forth and should be added to the CMP.	- The procedures for processing the consistency certifications will be established in the rules and regulations as mandated in the legislation.
- We note also, in Appendix B, pp. B-12 and B-12, that the Department of the Interior does not have any Federal licenses or permits listed. This appears to be in direct conflict with the statements on p. B-9, paragraph 2. The section on leases or other authorizations on p. 149 discusses Territorial leases and Federal mineral extraction leases; permitted activities should also be discussed at this point.	- The Territory has decided not to request notice and consistency review on DOI "permits." Therefore, consistency will not apply to DOI "permit" activities unless the Program is amended in the future.
- The section on the Permit System (p. 140) should discuss or refer to the section which discusses how the Territory will process applications where permits are not required from the commissioner (e.g. Federal permits other than COE's).	- The Virgin Islands has indicated on pp. B-12-13 those permits that will be subject to certification under consistency. As all of those listed relate to some sort of development taking place in the first tier, the Commission will be making a permit decision.
- The eleven "distinct coastal environments" listed on page 80 and utilized to prepare the Coastal Environment Map are derived from biological, cultural and geomorphic factors, but the final product does not appear to be an entirely logical classification. No estuary environment is given in the classification, nor are references made to coastal ground water environments. Indeed, the recognition of hydrogeologic environments of coasts is important also from a developmental aspect as, for example, the existence of fresh	- There are no estuaries and minimal, if any, freshwater aquifer in the Virgin Islands.

Comment	Response
water under artesian conditions near a coast can facilitate the development of activities requiring fresh water. In turn, the size of a coastal fresh water aquifer may govern the size and distribution of any human activity carried out on the coast. We suggest that the consideration of types of ground water impacts related to coastal zone development should include such matters as increasing saltwater mains, and protection of recharge through beach sands to alluvium or other aquifers or to underlying fresh water bodies.	
- In the statement of Program Goals and Coastal Policies (Chapter 5), we note on page 71 that the protection of historic resources is a goal specifically recognized in the Virgin Islands Coastal Zone Management Act of 1977. However, in the statement of coastal policies on pp. 72-76, there is no expressed policy recognition for such resources. Because historic resources are manageable, we recommend that a specific policy statement be included to strengthen implementation of the goal of protecting the integrity and fragility of such resources. We recommend also that the management of historic resources be given specific recognition in the statements on permissible land and water uses, guidelines for priority uses, and the land and water use plan.	- There is no specific policy concerning historic resources as it was felt that the policies of the Planning Board, in managing the Virgin Islands historic preservation districts and the National Park Service are adequate for direct decision-making. Note that the Planning Directo is the Historic Preservation Officer for the Virgin Islands.
- The draft environmental impact statement (DEIS) which covers the impacts of the draft Virgin Islands coastal management program is well-written and reads fluently. In general, the statement is adequate.	- No response necessary.
- We believe that the statement and program fail to investigate and evaluate all alternatives for managing the areas of particular concern (APCs). Our previous comments pertaining to the program discuss and substantiate our concerns related to these weaknesses. We urge that these matters be resolved prior to final program approval.	- The alternatives discussed in the DEIS were for nomination purposes, notmanagement. The suggested guidance found in the program is subject to refinement during 306.
- Secondly, in the section on Administration and Enforcement (pp. 59-60, the final statement should evaluate the environmental effects on coastal zone resources should the Port Authority properties be exempt from the Trustlands, Occupancy and Alternation Control Act and Open Shorelines Act. The final statement should discuss possible solutions to resolve this conflict and the environmental benefits that could be derived.	- The Port Authority properties are explicitly included in the VICZMA.

Hearing Comments, St. Croix: 8/31/77

Carl B. Seiffer (owns Buccanneer Hotel)

- Feels that the Open Beaches Act has resulted in littered beaches. Wants to know what program will do to affect this situation. Wants to know if it is necessary to have more "open beaches."	- A beach maintenance program will be initiated and administered by DCCA with 306 funds. Open shorelines are a matter of Virgin Islands law.

Comment	Response
Robert Bidel Spacher (private citizen)	
- Agrees with the basic concepts of the CZMP.	- No response necessary.
- What will happen to the property rights of those people in the coastal zone?	- No property rights will be affected in an unconstitutional manner.
- Feels the economic impacts of the program will be negative.	- According to the socio-economic impact study done by the Virgin Islands Planning Office, there will not be any net adverse impacts to the Virgin Islands as a result of the implementation of this program.
Hearing Comments, St. Thomas: 8/30/77	
Amory Coron (property owner in Smith Bay)	
- Feels that the proposed program will affect his property in a restrictive and arbitrary way.	- Property rights will not be restricted in an unconstitutional manner.
- Does not feel that it is necessary to change the present zoning.	- The zoning changes, if any, will occur during the year following the passage of the legislation. Only a few changes need to be made to reflect the policies. All development in the first tier requires a coastal zone permit. The zoning will indicate to the property owner what are permitted uses in certain areas.
- Sees no definitive boundary demarcation. Feels that, therefore, the boundary is arbitrary.	- The first tier boundary is based on technical information and lies on easily recognized features or administrative lines.
Mr. Ketchum (private citizen)	
- Concerned that boating/marinas are treated adequately.	- Boating and marinas have been adequately addressed in the VICZMP.
Mr. Robert W. Slidall (private citizen)	
- Feels that the VICZM Bill supercedes existing law. Why is program going to be implemented by a new agency where the Department of Sanitation, the Department of Public Works, the Planning Office, etc., take care of the Virgin Islands coastal area already.	- The VICZM centralized decision-making in the DCCA to eliminate the redundancy or conflict, the lack of appropriate standards, and the failure to specify any time limit for decision-making.
- If program is implemented, he does not feel that the decision-making should be done by one person.	- A commission will make the permit decisions.

Comment	Response
J. K. Thomas St. Croix Chamber of Commerce	
Amendments were suggested to the Virgin Islands Coastal Zone Management Bill.	These amendment suggestions were to the Legislature.
George W. Hindels Private Individual Land Owner	
The passage of the Coastal Zone Management will add little to the protection of the ecology.	The VICZMP will provide for the conservation, preservation, and where feasible, the restoration of coastal resources.
There is a complete absence of an economic impact statement.	An economic impact study was done by the VIPO and is available from them by request.
Any potential investor in a hotel or real estate development will turn away when confronted with regulations that include the use of "police power" to bring about the forced dedication of land and improvements.	Nothing in legislation "forces" dedication of land.
The implied requirement that hotel resorts be built "in the hills" rather than at the seashore will have negative impacts on the economy.	There is no implied requirement, in fact, hotels can be built on the shoreline if they meet the goals and policies of the VICZMA.
The administrative aspects of the CZM Program do not seem logical. Specifically, the criteria for the requirement for a major, rather than minor, coastal zone permit. The amount of money spent does not have an ecological impact. Also, do the ecological requirements and conditions change after twelve months?	The VICZMA creates a more efficient mechanism for administering permits within the first tier.
Page 2, line 10; the legislation has not been passed.	The legislation will be passed prior to the approval of this Program.
It is unclear if non-action by the Commissioner shall be deemed as approval or disapproval of a permit. Page 144 of the Draft EIS says non-action by the Commissioner deems approval. Page 30 of the draft CZM Program submitted by the Virgin Islands Planning Office states that non-action by the Commissioner shall be deemed disapproval.	Non-action by the Commission shall be deemed as approval of a permit. Please see legislation enclosed.
On Page 22, line 9, of the Virgin Islands draft law, under (H), it reads: The Commissioner may require that public access from the nearest public roadway to the shoreline be dedicated in new development projects requiring a major coastal zone permit.	
On Page 24, line 22, of the Virgin Islands draft law, it reads: "In connection with any major coastal zone permit issued for development adjacent to the shoreline, the Commissioner may require the dedication of an easement or a fee interest in land for public highways to the sea.	
It appears that this part of the V.I. Coastal Zone Management Draft Law was written without consideration of the aforementioned pertinent chapter of the Virgin Islands Code and appears both illegal and unConstitutional.	First, note that the legislation says "may" which indicates discretions. Secondly, the statements are not illegal or unConstitutional.

STATEMENTS AT THE PUBLIC HEARINGS

Comment	Response
Caroline Stuart-Jervis President, St. Croix Board of Realtors	
The published goals of Coastal Zone Management Program are generally supported by the St. Croix Board of Realtors. The Board agrees that the Program: 1. Accommodates growth and facilitates economic gains for the Virgin Islands and at the same time protects valuable and irretrievable natural resources; 2. Promotes public use and enjoyment of the shoreline as well as uses of submerged lands which are in keeping with the doctrine of public trust; 3. Acknowledges the importance of individual rights and freedoms in using the coast by establishing sound management with a minimum of regulation and administrative requirements.	No response necessary.
The Board feels that:	
1. The Program will have disastrous effects on the future growth of tourism on St. Croix.	According to the Socio Economic Impacts of the VICZMP, there is no evidence that the Program will have a disastrous or negative effect on tourism on St. Croix, in fact, in many areas, it should result in economic benefits.
2. The Program, as expressed for St. Croix, has many inaccuracies and inconsistencies; we question the credibility of the study and the resultant report.	In the absence of substantiation or specifics, no response is necessary.
3. The Program emphasizes the recreation and conservation of the islands, but neglects to study the economic impact. We ask, can the Virgin Islands afford this Program?	A socio-economic impact study was done by the VIPO and is available.
4. The enabling law is too loosely drawn. There are too many details left open to the discretion of the Commissioner.	The legislation has been revised and is enclosed herein. All decisions must be based on the statutory goals and policies and rules and regulations subsequently approved by the Legislature.
Are the rights of private property owners being circumvented by the requirement that in order to have a subdivision approved, access to the beach must be dedicated to the public? No mention is made of compensation, as is required by the Virgin Islands Code, Chapter 20, "Real Property Acquisitions."	Nothing in the legislation "forces" dedication of access, nor are the contents of the legislation illegal or unconstitutional.
The realtors firmly believe that there has been inadequate input from the public sector of the community and that the input that has been made has been misinterpreted.	There has been adequate input from the public including special workshops, public hearings, and legislative hearings.
All property owners within the first tier should be notified and given a chance to comment.	Ample opportunity has been given to comment on the Program. If the Program is approved, a property owner may request DCCA to tell them if they are in the 1st tier.

Comment	Response
Frank McLaughlin President, St. Thomas-St. John Board of Realtors	
Mr. McLaughlin presented transcripts of his remarks made at the Virgin Islands Planning Office and Legislative hearings on the Program; most of this testimony therefore is not relevant to this discussion.	
1. The Coastal CZMP appears in concept, at least, to be a major step in the right direction.	1. No response necessary.
2. Feels that the program requires more study and time for reflection by the public.	2. The program has been adequate in efforts at eliciting public response and over two years of program development has provided numerous opportunities for citizen input.
3. There appears to be no provision in the plan for future growth.	3. The reference appears to be directed at the land and water use plan. This plan, as proposed, will be finalized during the next year.
4. Presently, the recreational areas, particularly the beaches, are mismanaged.	4. The proposed 306 management program provides for funds and manpower to remedy this situation.
5. Do not feel that the permit system provided for in the VICZMA will speed up the permit process.	5. Presently, there are no statutory time limits under the trustlands Occupancy and Alteration Act. This Program provides such time limits.
6. Are not convinced that DCCA should administer the program.	6. No rationale was offered to support this comment nor substantial alternative put forth, therefore, no comment is necessary.

Table of Contents

Page

SUMMARY i

INTRODUCTION

A. Federal Coastal Zone Management Program xxx

B. National Environmental Policy Act of 1969 xxxi

C. OCZM Requirements for Program Approval (Section 306) to the Virgin Islands Coastal Management Submission xxxii

SECTION 1

Virgin Islands Coastal Zone Management Program

PART 1 OVERVIEW

CHAPTER ONE - INTRODUCTION AND OVERVIEW

The Coastal Zone Management Act of 1972 1
What is Coastal Zone Management 2
Overview of the Virgin Islands CZM Program 3
Report Format 6

PART 2 CONTEXT FOR PLANNING

CHAPTER TWO - STUDY PROCEDURES

Coastal Zone Management Program Development Process 9
Program Elements 11
Technical Work Tasks 12
Public and Governmental Involvement and Federal Interaction 14

CHAPTER THREE - CONTEXT FOR PLANNING: BACKGROUND AND SETTING

Resource Setting: An Image of the Virgin Islands 17
Economic Setting 22
Present and Future Shoreline Uses 30
Public Attitudes Regarding Shoreline Use 36
Political/Institutional Setting 38

CHAPTER FOUR - PROBLEMS AND ISSUES TO BE ADDRESSED BY THE COASTAL ZONE MANAGEMENT PROGRAM

The Economic Boom of the 1960's and Need for Planning 53
Specific Problems and Issues 54
Short Term vs. Long Term Productivity 58
Shoreline Access 58
Administration and Enforcement 59

PART 3 MANAGEMENT PROGRAM

CHAPTER FIVE - DEVELOPMENT OF THE COASTAL LAND AND WATER USE PLAN

Boundary Definition 63
Program Goals and Coastal Policies 69
Permissible Land and Water Uses 77
Land and Water Use Plan 86

CHAPTER SIX - SHORELINE ACCESS AND USE

Background of the Problem 93
Beach Inventory 95
Options for Action 99
New Government Responsibilities 104
Further Recommendations Concerning Public Shoreline Access and Use 104

CHAPTER SEVEN - AREAS OF PARTICULAR CONCERN

Site Specific Recommendations 110
St. Croix 111
St. Thomas 118
St. John 127

CHAPTER EIGHT - MECHANISMS FOR IMPLEMENTATION: ORGANIZATION AND AUTHORITIES

Federal Requirements 131
Existing Management Regulations: Organization and Permit System 133
Implementation Mechanism 139
Leases or Other Authorizations 149
Federal Consistency Certification 150
Rearrangements of Legislative Regimes 150

SECTION 2

PART FOUR ENVIRONMENTAL IMPACTS

CHAPTER NINE - DESCRIPTION OF PROPOSED ACTION ..... Part 3

CHAPTER TEN - DESCRIPTION OF THE ENVIRONMENT AFFECTED ..... Part 2

CHAPTER ELEVEN - RELATIONSHIP OF THE ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE VIRGIN ISLANDS ..... Chapter 3 and Appendix 9

CHAPTER TWELVE - PROBABLE IMPACT OF THE PROPOSED ACTION ON THE ENVIRONMENT 157

CHAPTER THIRTEEN - ALTERNATIVES TO THE VIRGIN ISLANDS COASTAL ZONE MANAGEMENT PROGRAM 161

CHAPTER FOURTEEN - PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED 166

CHAPTER FIFTEEN - RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY 166

CHAPTER SIXTEEN - IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED 167

CHAPTER SEVENTEEN - CONSULTATION AND COORDINATION WITH OTHERS 167

LIST OF FIGURES

2.1 CZM Program Development Process..... 10
3.1 The U.S. Virgin Islands..... 18
3.5 Development Proposals..... 33
3.6 Existing Regulatory System..... 47
6.1 Target Beach Areas..... 97
7.1 Areas of Particular Concern..... 109
8.1 Existing Organization - DCCA..... 133
8.2 Land And Water Use Laws and Implementing Agencies..... 135
8.3 Existing Permit Review Processes..... 137
8.4 Existing and Proposed Areas of Jurisdiction..... 138
8.5 Proposed Coastal Zone Permit Review Process..... 142
8.6 Proposed Organization - DCCA..... 145
8.7 Proposed Regulatory System..... 147

LIST OF TABLES

3.1 Chronology of Coastal Related Activities and Legislation..... 45
5.1 Uses/Activities Subject to Management Program..... 79
5.2 Priority of Uses..... 81
5.3 Coastal Land and Water Uses Classification System..... 87

INTRODUCTION

A. The Federal Coastal Zone Management Program

In response to the intense pressures upon, and because of the importance of the coastal zone of the United States, Congress passed the Coastal Zone Management Act (CZMA) (P.L. 92-583) which was signed into law on October 27, 1972. The Act authorized a Federal grant-in-aid program to be administered by the Secretary of Commerce, who in turn delegated this responsibility to the National Oceanic and Atmospheric Administration's (NOAA) Office of Coastal Zone Management (OCZM).

The Coastal Zone Management Act of 1972 was substantially amended on July 26, 1976 (P.L. 94-370). The CZMA affirms a national interest in the effective protection and development of the coastal zone, by providing assistance and encouragement to coastal States to develop and implement rational programs for managing their coastal zones. The CZMA opens by stating "[t]here is a national interest in the effective management, beneficial use, protection, and development of the coastal zone" (Section 302(a)). The statement of Congressional findings goes on to describe how competition for the utilization of coastal resources, brought on by the increased demands of population growth and economic expansion, has led to the degradation of the coastal environment, including the "loss of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use, and shoreline erosion." The CZMA states "[t]he key to more effective protection and use of the land and water resources of the coastal zone is to encourage states to exercise their full authority over the land and waters in the coastal zone by the assisting states . . . in developing land and water use programs . . . for dealing with [coastal] land and water use decisions of more than local significance" (Section 302(h)).

While local governments and Federal agencies are required to cooperate and participate in the development of management programs, the State level of government is given the central role and responsibility for this process. Financial assistance grants are authorized by the CZMA to provide States with the means of achieving these objectives and policies. Under Section 305, thirty coastal States which border on the Atlantic or Pacific Oceans, Gulf of Mexico, and the Great Lakes, and four U.S. territories are eligible to receive grants from NOAA for 80 percent of the costs of developing coastal management programs. Broad guidelines and the basic requirements of the CZMA provide the necessary direction for developing these programs. The guidelines defining the procedures by which States can qualify to receive development grants under Section 305 of the CZMA, and the policies for development of a State management program, were published on November 29, 1973 (15CFR920).

B. National Environmental Policy Act of 1969 Requirements

On January 1, 1970, the President signed into law the National Environmental Policy Act (NEPA), which required each Federal agency to prepare a statement of environmental impact in advance to each major action that may significantly affect the quality of the human environment. An environmental impact statement (EIS) must assess potential environmental impacts of a proposed action in order to disclose environmental consequences of such action.

To comply with NEPA's requirement of preparing an EIS, OCZM has combined the State's coastal management program (which is the proposed action) with a discussion of the environmental impacts. The CZMA is based upon the premise that the environmental aspects of the coastal management program should receive significant consideration in the development of State programs. Therefore, as you read this EIS you should be aware that the State coastal management program is the core document included in its entirety supplemented by the requirements of NEPA, Section 102(2)(c).

For reviewers more familiar with the NEPA requirement for content of an EIS, below is an index of where you will find this information:

Description of the proposed action	Chap. 5-8
Description of the environment affected	Chap. 3-4
Relationship of the proposed action to land use plans, policies, and controls for the affected area	Chapter 11 and Appendix B
Probable impact of the proposed action on the environment	Chapter 12
Alternatives to the proposed action	Chapter 13
Probable adverse environmental effects which cannot be avoided	Chapter 14
Relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity	Chapter 15
Irreversible and irretrievable commitments of resources that would be involved in the proposed action should it be implemented	Chapter 16
An indication of what other interests and considerations of Federal policy are thought to offset the adverse environmental effects of the proposed action	Chapter 17

C. Relationship of OCZM Requirements for Program Approval (Section 306) to the Virgin Islands Coastal Management Program Submission

OCZM Requirements 15 CFR Part 923, Section:		Virgin Islands Coastal Management Program
.4(b)	Problems, Issues, and Objectives	Chapter 4
.5	Environmental Impact Assessment	Chapter 9-17
.11	Boundaries	Chapter 5
.12	Land and Water Uses to be Managed	Chapter 5
.13	Areas of Particular Concern	Chapter 7
.14	Guidelines On Priority of Uses	Chapter 8
.15	National Interest in the Siting of Facilities	Appendix B
.16	Area Designation for Preservation and Restoration	Chapter 5
.17	Local Regulations and Uses of Regional Benefit	Not applicable
.18	Shorefront Access Planning	Chapter 6
.19	Energy Facility Planning	Not complete
.20	Shoreline Erosion	Not complete
.31	Means of Exerting State Control over Land and Water Uses	Chapter 5
.32	Organizational Structure to Implement the Management Program	Chapter 3
.33	Designation of Single Agency	Chapter 8
.34	Authorities to Administer Land and Water Use, Control Development and Resolve Conflicts	Chapter 8
.35	Authorities for Property Acquisition	Chapter 6
.36	Techniques for Control of Land and Water Uses	Chapter 8
.41	Full Participation by Relevant Bodies In Adoption of Management Program	Appendix A
.42	Consultation and Coordination With Other Planning	Appendix A and B

.51 Public Hearings..... Appendix A and B

.52 Gubernatorial Review and Approval..... Attached

.53 Segmentation..... Not applicable

.54 Applicability of Air and Water Pollution Control Requirements..... Appendix B

ERRATA SHEET

1. Please make the following changes in the FEIS:

a. Page 21, paragraph 3, line 4: Add as a footnote the following:
The waters of the Virgin Islands between mean high tide and the three mile territorial limit, designated as "Open Water" in the Program includes habitat for the humpback whale (Megaptera novaeangliae), the Atlantic bottlenose dolphin (Tursiops truncatus), the spinner dolphin (Stenella longirostris), the spotted dolphin (Stenella frontalis), the minke whale (Balaenoptera acutorostrata), the sperm whale (Physeter catadon), the short finned pilot whale (Globicephala macrornynchus), Cuvier's beaked whale (Zipnius cavirostris), and probably the common dolphin (Delphinus delphis).

b. Page 32, paragraph (2), lines 5 and 6: Delete "approval is pending" and add "issued a permit 4 October 1976 for the offshore terminal."

c. Page 34, first paragraph, lines 6 and 7: Delete "Project approval -- is pending, " as the application has not been received.

d. Pages 34 and 35, paragraph (7): The proposals of the West Indian Company, Ltd., for filling of 29 acres requires a Department of the Army permit under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Federal Water Pollution Control Act Amendments of 1972. The permit application is pending and an Environmental Impact Statement is in preparation.

e. Page 115, paragraph 6(b), line 7: Delete "approval is pending" and add "issued a permit for the offshore terminal 4 October 1976."

f. Page 146 add before Commission of Conservation and Cultural Affairs:
COASTAL ZONE COMMISSION
A Coastal Zone Commission has been created to administer portions of the management program. The Commission shall be attached to the Department of Conservation and Cultural Affairs for the purposes of issuing rules and regulations and major coastal zone permit. The Commission consists of seven members appointed by the Governor and confirmed by the Legislature: two ex-officio members, the Commissioner of Conservation and Cultural Affairs who shall serve as committee chairman, the Director of Planning, and five members of the public.

All references to the Commissioner with respect to major permits and promulgation of rules and regulations are in error and should read the "Coastal Zone Commission." All other references that relate to the issuance of permits and promulgation of rules and regulations should read "Commission or Commissioner."

2. Please make the following changes to the Appendicies found in the DEIS:

a. Appendix B, pages B-10, 11 - change

1) Coast Guard Light Station St. Thomas is located on 9.4 acres rather than 6.0.

2) Charlotte Amalie Coast Guard Light Attendant Station located on ½ acre owned and ½ acre on permit from the local government has been omitted.

3) Ft. Louise Augusto Light is located on 0.1 acre at St. Croix and has been omitted.

4) Ham's Bluff Light Station is located on 22.5 acres rather than 16.5.

b. Appendix B page 13: Delete Marine Mammal Protection Act.

c. Glossary, unnumbered page: Add the National Marine Fisheries Service is responsible for assisting in the Enforcement Act.

SECTION ONE

Virgin Islands Coastal Zone Management Program

1

OVERVIEW

CHAPTER ONE

Introduction and Overview

The Coastal Zone Management Act of 1972

In recognition of the importance of coastal resources to the nation's economic and environmental well being, and of the escalating and conflicting demands for their use, Congress enacted the Coastal Zone Management Act of 1972 (P.L. 92-583). The intent of the Act is to stimulate state and territorial leadership in planning and managing the use of coastal areas. The Act establishes grant programs to financially assist the states and territories in developing management programs (305 Planning Grants) and also provides a variety of financial aid for the implementation of approved programs (306 Administration Grants).

At the Federal level, responsibility for administering the Act has been delegated to the Office of Coastal Zone Management (OCZM) within the U. S. Commerce Department's National Oceanic and Atmospheric Administration (NOAA). Its major responsibilities involve the disbursement of grant funds and the establishment of program guidelines. Fulfillment of these guidelines (Program Elements) is necessary for program approval and receipt of Section 306 Administration Grants. The Program Elements are:

1. delineation of the boundary of the geographic area to be managed;
2. a determination of land and water uses which have a direct and significant impact on coastal waters and which will be managed. Priority of use as well as permissible coastal uses are to be identified;
3. a designation and inventory of geographic areas of particular concern;
4. public and governmental involvement;
5. consultation and coordination with relevant Federal agencies, and consideration of the national interest; and
6. development of an organizational structure and legal authorities to implement the program.

Amendments to the Coastal Zone Management Act in 1976 (P.L. 94-370) specify three new 305 elements that must be completed by October 1, 1978. They are:

1. a planning process that identifies public shorefront areas appropriate for protection

and/or increased access;

2. a planning process that can anticipate and manage the impacts from energy facilities in or on the coastal zone; and

3. a method of assessing the effects of shoreline erosion.

Within the general Federal planning framework, each of the thirty-three coastal states and territories has considerable flexibility to create a program and develop an approach which addresses their particular coastal problems and needs. In the Virgin Islands, the Planning Office is responsible for program development.

This document represents two and one half years of effort on the part of the Virgin Islands Planning Office, the culmination of which has been the recent enactment of the Virgin Islands Coastal Zone Management Act of 1977 (Virgin Islands CZMA of 1977). The purpose of this document is to elicit both public and governmental responses, at both the Federal and territorial level, so that the Virgin Islands Coastal Zone Management Program (CZMP) may be further refined prior to final approval by the Secretary of Commerce. Following final approval by the Secretary of Commerce, the Virgin Islands will be eligible to receive a minimum of $600,000 annually for program implementation. In addition, funds will also be available for further planning, research, the siting of energy facilities, acquisition of beach access and island preservation. Accordingly, the Territory's coastal zone management program can be a major tool for shaping the future of the Islands.

What Is Coastal Zone Management

A coastal zone program represents many different things to different people. To the conservation minded, the concept represents either a panacea for every excess of the private sector or governmental agencies, or the solution to every unsolved coastal related problem. Others fear "management" as yet another intrusion by the government into the "rights of the individual," or the imposition of additional "red tape" and bureaucratic delay. It is often interpreted as "environmental determinism," the imposition of natural environmental values over all others.

In reality, sound coastal zone management is none of these extremes. A successful program should seek to harmonize cultural, economic, and environmental values to balance environmental protection and economic development with a minimum of regulation. It is the intent of the Planning Office to create a dialogue which pools the knowledge of both experts and the public to produce a technically sound, and clearly stated management program that has the widespread support necessary for program approval and effective implementation. The following goals and objectives serve to facilitate comprehension of what coastal zone management means within the Virgin Islands context and the direction taken to date in program development. It is the goal

of the Planning Office to develop a management program that:

1. accommodates growth and facilitates economic gains for the Virgin Islands and at the same time protects valuable and irretrievable natural resources:
   - o manages the impact of human activity so as to maintain, and where possible, enhance the coastal environment;
   - o manages the development of renewable resources to achieve optimum sustainable yield; and
   - o manages non-renewable resources in light of long-term needs and interests.
2. promotes public use and enjoyment of the shoreline as well as uses of submerged lands which are in keeping with the doctrine of public trust:
   - o insures that traditional uses are protected;
   - o insures that diverse recreational opportunities are available, affordable and reasonably convenient; and
   - o protects and enhances scenic quality for the benefit of residents and tourists alike.
3. acknowledges the importance of individual rights and freedoms in using the coast by establishing sound management with a minimum of regulation and administrative requirements.

Overview Of The Virgin Islands CZM Program

The development of a coastal zone management program has resulted in a number of recommendations. The purpose of this section is to summarize the major recommendations and to present a general overview of the program.

The recommendations are broadly categorized into two classes: those relating to the development of a general land and water use plan for the coastal area, and those relating to the amendment of legal authorities and the revision of institutional arrangements.

LAND AND WATER USE RECOMMENTATIONS

- o The Coastal Zone Management Act (CZMA) requires that the management program include an identification of the boundaries of the coastal zone. The determination must include lands with a direct and significant impact upon coastal waters. A "two-tier" approach to boundary definition is recommended (the

extent of the boundary is identified on the Coastal Land and Water Use Map). The first tier comprises those areas with the strongest relationship to the "coastal waters." It extends to the limits of the territorial sea and includes all offshore islands and cays. The landward extent of the first tier is drawn along biophysical features (such as ridgelines and contours) and administrative features (property lines, roads, districts). The second tier of the boundary includes the remaining inland areas of the three main islands. As a provision of the CZMA, all Federally owned lands are excluded from the coastal zone.

- Highest priority for shoreline uses should be given to water dependent uses, particularly in those areas suitable for commercial, industrial, marine facilities, or recreational uses.

  Secondary priority should be given to those uses that are water related. Uses that are neither water dependent nor related should not be permitted in coastal areas suitable for industrial/commercial/marine facility development.
- High intensity residential and non-water dependent or related development should be located inland.
- Growth should be guided into areas already served by infrastructure (sewers, water, transportation facilities).

  Accordingly, increased commercial and industrial uses should be located in existing "developed" areas in "clusters" to minimize the impacts.
- The function and integrity of reefs, marine meadows, salt ponds, mangroves, and other natural systems that play a role in satisfying the human and other living resource needs of the Virgin Islands should be preserved.
- The relatively pristine environments of offshore islands and cays, particularly in contrast to that of the developing main islands, represents a natural resource unparalleled in the Virgin Islands and should be preserved.
- Rezoning should take place in the coastal zone to effectuate the use recommendations and to insure that the particular environmental and developmental needs of coastal areas are recognized.
- Shoreline access and use should be assured through a series of easements and fee simple purchases, application of common law doctrines and

enforcement of the relevant provisions of the Industrial Incentive Act. Furthermore, a public access provision should be incorporated into the Subdivision Law.

RECOMMENDED LEGAL/INSTITUTIONAL REVISIONS

- The Department of Conservation and Cultural Affairs should be designated as the agency to implement the Coastal Zone Management Program. The present Bureau of Shoreline and Land Management within the Division of Natural Resources Management should be redesignated as the Division of Coastal Zone Management (DCZM), and charged with major implementation responsibilities and the issuance of coastal permits for all developmental activities.
- The major existing licensing and permit programs within the first tier coastal zone boundary should be consolidated under the Division of CZM. This includes the Open Shoreline Act, Trustland Occupancy and Alteration Control Act, Earth Change Law and the Zoning Law.
- The new legislation should establish a streamlined permit system to assure implementation of the CZM Program.
- The new permit system should be "impact oriented" with proposals being evaluated with respect to siting, aesthetic, and environmental standards.
- The permit system should contain two types of permits:
  1. Major permits issues by the Commissioner of Conservation and Cultural Affairs for activities with a major impact on the coastal zone.
  2. Minor permits issued by the Commissioner for activities with minimal impacts to the coastal zone.
- Dedication of beach and shorelines access should be encouraged and facilitated by making dedication of access a condition of the CZM permit.

Report Format

This report is a draft, designed to invite discussion, and as such, has been compiled to address the needs and requirements of several audiences: Virgin Islands governmental agencies, advisory committees, interest groups and the public, the Office of Coastal Zone Management, and the various Federal agencies with whom consultation and coordination is required by the Act. As an aid in directing individuals to those aspects of the program in which they may be most interested, the contents are outlined as follows:

The report has been divided into five parts: PART I, Introduction and Overview; PART II, Context for Planning; PART III, The Management Program; PART IV, Environmental Impacts; and PART V, Appendices. PART II consists of Chapters Two, Three and Four. Chapter Two, Study Procedures, summarizes the process used in developing the coastal zone managment program. The six major Federal requirements involved certain technical tasks, as well as interaction with a wide array of governmental agencies, citizens groups and individuals. These tasks include resource inventories and capability analysis, legal institutional analysis, attitude-value survey, economic and social needs-demand study, and a visual quality-aesthetic assessment. The methodologies and objectives of each are outlined. A full discussion of each of these special studies has been prepared as a separate technical report. Efforts at Federal agency interaction and consideration of the national interest, and public and territorial governmental input are summarized in the Appendices.

Chapter Three, Context for Planning: Background and Setting, is a discussion of the context in which the program was developed. It briefly highlights the physical/natural resource attributes of the Virgin Islands and the economic base and projected use trends as they relate to the coastal zone. The last section of the chapter focuses on the existing political and institutional setting by taking a historical perspective of coastal related activities and legislation. The structure of the Virgin Islands Government, as it relates to the coastal zone management program, is also discussed.

Chapter Four, Issues and Problems to be Addressed by the CZMP, follows in the discussion of the setting and indicated those coastal related problems and issues that are addressed by the management program.

PART III is The Management Program and consists of Chapters Five, Six, Seven and Eight. Chapter Five is the Development of the Coastal Land and Water Use Plan. In it, the process for developing the plan is outlined. The coastal goals, policies and guidelines are stated as well as the delineation of a boundary for the coastal zone. The processes for defining and assigning priorities to "permissible uses" and recommended guidelines for generic coastal environments comprise the third section. The last section of Chapter Five describes the Coastal Land and Water Use Plan (CLWUP).

Chapter Six is Shoreline Access and Use. The results of a shoreline/beach assessment and subsequent recommendations for action are outlined. Several methods of securing shoreline access and use are discussed.

Chapter Seven, Areas of Particular Concern, concerns site specific recommendations for areas of special importance. The process and criteria for nominating and designating areas of particular concern (APC) are outlined. Use recommendations for each APC are indicated by Island.

Chapter Eight, Mechanisms for Implementation, sets forth revised legal authorities and agency organizations and responsibilities. Recommendations regarding the consolidation of several existing Acts, a revised permit process, and the expanded jurisdiction of the Department of Conservation and Cultural Affairs are outlined.

Part IV contains a discussion of the environmental impacts associated with the implementation of the proposed Virgin Islands Coastal Zone Management Program as required by Section 102(2)(c) of NEPA.

2

CONTEXT FOR PLANNING

CHAPTER TWO

Study Procedures

This chapter sets forth the various procedures, methods, and processes employed by the Planning Office in the development of a Coastal Zone Management Program (CZMP) for the Virgin Islands. The first section includes a brief overview and explanation of the process employed in developing the management program. The relationship of the required program elements, a set of study procedures, the recommended CZM Program and mechanisms for implementation are diagramed schematically. The second section outlines the program elements which are required by the Federal Coastal Zone Management Act. The third summarizes the technical work tasks and briefly explains the objectives and methods which were developed for each of the work tasks. Section Four is a summary of public participation and local governmental involvement in the planning process. Interaction with Federal agencies and consideration of the national interest are also outlined.

Coastal Zone Management Program Development Process

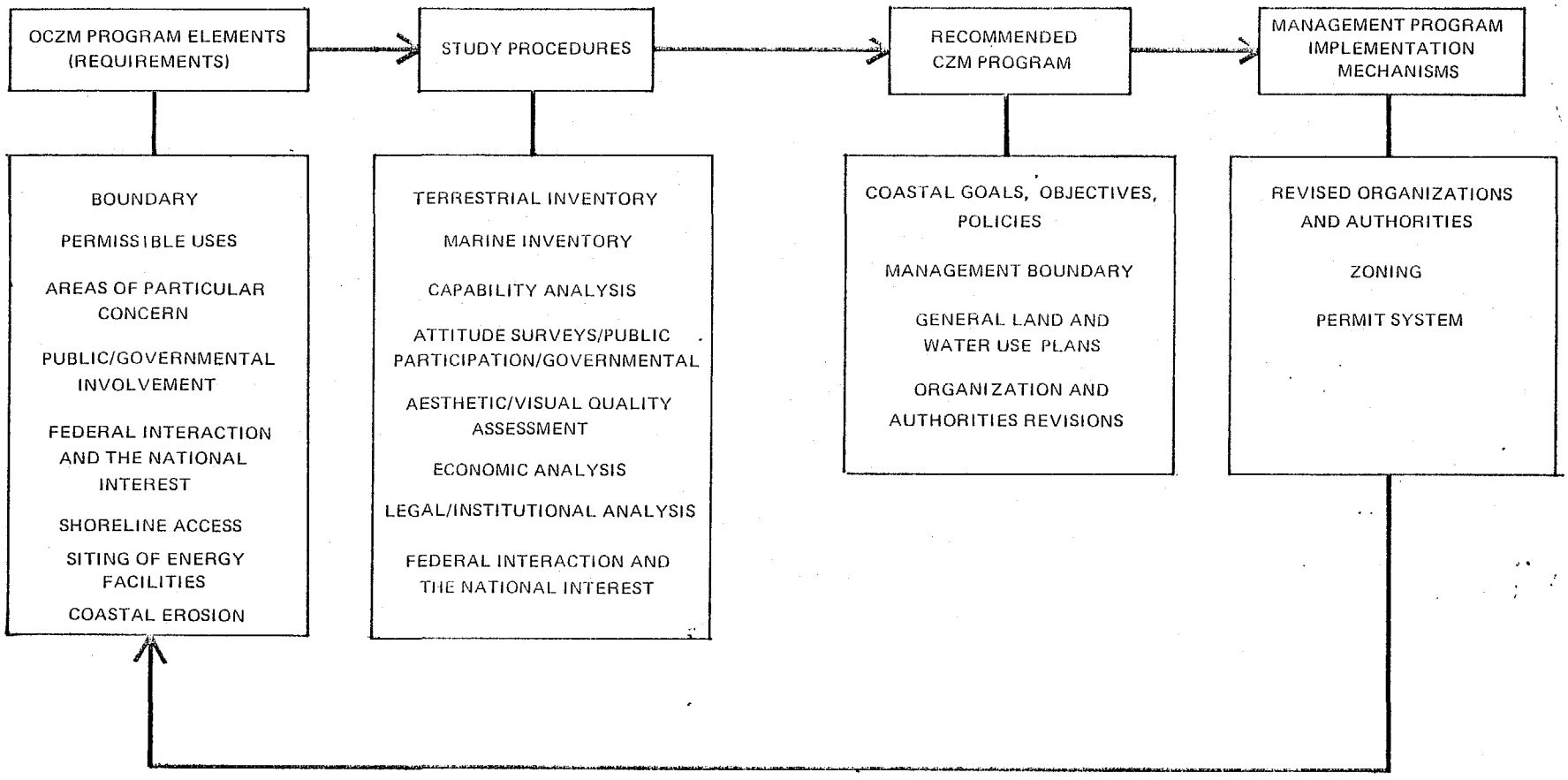
This section illustrates the relationship of the program elements, study procedures, recommendations, and final implementation mechanisms. This interrelationship is represented schematically in Figure 2.1. There are essentially four phases in the development of the Virgin Islands Coastal Zone Management Program (CZMP).

The first phase is identification of those elements statutorally required of every 305 program.

The second is the completion of a series of analyses and assessments necessary to satisfy the program elements, and to provide a data base from which informed planning decisions can be made. The study procedures are comprised of the technical tasks and two of the program elements. The inventories, capability analysis, attitude survey, visual quality assessment, and social and economic needs-demands analysis generate information that enables the requirements of the program elements to be satisfied. The legal and institutional analysis was undertaken specifically to meet the authorities and organization requirement, and leads directly to the proposed organizational and authorities revision. The program elements of

FIGURE 2.1

CZM PROGRAM DEVELOPMENT PROCESS



public and governmental involvement and Federal interaction provide mechanisms for obtaining input from the public and the various levels of government.

The third development phase is represented by this document - a set of recommendations that constitute the proposed management program. There are four major aspects to this phase: a set of proposed goals, policies and guidelines, a proposed boundary for the management area, a proposed general land and water use plan, and recommended authority and organizational changes that facilitate implementation of the program.

The recommendations result in a management program containing several implementation mechanisms. There is a revised organization, a set of new or amended authorities that delineate the coastal zone boundary and a coastal permit system, and a set of zoning revisions consistent with the general land and water use plan. The management program and the implementation mechanisms in turn have been developed in such a manner that they will satisfy and fulfill the program elements.

Program Elements

The Office of Coastal Zone Management in the National Oceanic and Atmospheric Administration (NOAA) has promulgated regulations for the development of a management program under Section 305 of the CZMA and requirements for program approval (15 CFR 923). Further clarification of the intent of the Act, and guidelines for plan development were set forth by OCZM in a series of general policy papers (Threshold Papers) regarding the statutory requirements. The elements which must be contained in the management program are as follows:

1. an identification of the boundaries of the coastal zone subject to the management program;
2. a definition of permissible land and water uses within the coastal zone which have a direct and significant impact on the coastal waters and the guidelines for determining the priorities for those uses;
3. an inventory and designation of areas of particular concern within the coastal zone;
4. a demonstration that public and governmental participation in the planning process was encouraged and that an opportunity for participation existed;
5. a demonstration that there has been coordination and consultation with Federal agencies and that consideration of the national interest was

included in program development;

6. a description of the organizational structure and authorities proposed to implement the management program, including the responsibilities and inter-relationships of local, area-wide, state, regional, and interstate agencies in the management process;
7. a planning process that identifies public shorefront areas appropriate for protection and/or increased access;
8. a planning process that can anticipate and manage the impacts from energy facilities in or on the coastal zone; and
9. a method of assessing the effects of shoreline erosion.

Technical Work Tasks

In order to adequately address the substance and spirit of the program elements, and to make balanced, informed planning decisions, six studies were undertaken: 1) a marine and terrestrial resource inventory, 2) an analysis of environmental capability, 3) a legal-institutional analysis, 4) a survey of public attitudes and values, 5) an economic and social needs-demand study, and 6) a visual quality-aesthetic assessment. The methods and objectives of each analysis are outlined below.

1. Resource Inventory. The CZMA requires that an inventory of natural and man-made resources be undertaken. Those natural and cultural resource factors located and inventoried as part of the CZM program include historic and archaeological sites, water and air quality, marine and terrestrial coastal environments, environmentally critical areas, land and water uses, wastewater treatment facilities, land and marine recreation sites, visual quality, tidal and gut flooding, and land ownership. The resource inventory has been compiled for publication as a Technical Supplement.
2. Capability Analysis. The Act also requires that use determinations be based, in part, upon "the capabilities of each resource for supporting various types of uses and the impact of various resource uses upon the natural environment." This analysis has taken the form of an assessment of the capabilities of the coastal environments to sustain various types

of development in terms of environmental impacts. This assessment was completed by the Planning Office staff in consultation with a Technical Advisory Committee made up of Virgin Islands' scientists and related professionals.

3. Legal-Institutional Analysis. A legal and institutional analysis was undertaken to assess the present legal authorities and organizational regimes with respect to the implementation of a coastal zone management program. A thorough analysis of all coastal related legislation was completed. The statutory jurisdiction and responsibilities of the various agencies of the Virgin Islands government were outlined. In addition, the report sets forth several alternatives for organizational and jurisdictional changes necessary to implement a coastal zone management program. This analysis has been compiled as a Technical Supplement to the plan.

4. Public Attitude-Value Survey. In order to ascertain public sentiment regarding current and future coastal development, a household survey was undertaken. Random sampling procedures were followed to ensure that respondents were representatives of the Virgin Islands population as a whole. Interviews were conducted covering a series of questions regarding shoreline development and amenities.
Respondents were also shown a collection of photographs representing the various coastal environments, and their perceptions regarding relative scenic quality and appropriate uses for each shoretype were obtained. Shoretypes requiring protection from over-development were also indicated. Responses were analyzed on a territory-wide, Island-wide, and sub-island basis as well as by a variety of demographic variables. This survey has been compiled as a Technical Supplement.

5. Economic and Social Needs-Demand Study. The identification of the present activities and uses and anticipated future needs for the coastal zone is included in the program development. The information which was developed as a part of this economic overview has been used primarily as a frame-work for identifying critical future needs and areas subject to acute development pressures. The principle findings

of this economic analysis will also be used in conjunction with the preparation of the Environmental Impact Assessment for the proposed management plan.

The basic elements of this work task included: 1) a review of the past performance and trends in the economy of the Territory; 2) a compilation of all pertinent data currently available detailing population, employment, and earnings estimates for the Islands; 3) a review of all recent research concerning general economic and business conditions including the tourist industry, government finances, port facilities development, cost of living, and industrial incentive programs; 4) a detailed examination of all major planned or proposed public and private projects in the coastal zone; 5) an assessment of future use requirements for the Virgin Islands' coastal zone resources.

6. Coastal Aesthetics Assessment. A series of studies were conducted to identify those shore areas of high aesthetic value most in need of protection.

After assessing variations in visual character, the entire shoreline was categorized according to character-type. These classes were then sub-divided according to amount of development and shoreline configuration. Urbanized shores were categorized as either industrial or harbors. Each segment of the shoreline was then evaluated in terms of visual quality, relative abundance or scarcity of a particular shore type, and the probable relative impact of development on existing character.

Based on these assessments, a composite evaluation was assigned to each of the segments. The evaluations were used to assist in determining areas for preservation and conservation and to identify areas which can best accommodate development.

Public and Governmental Involvement and Federal Interaction

Federal interaction and Public Governmental Involvement have served to generate input utilized in developing permissible land and water uses, designating areas of particular concern,

developing site specific recommendations and a general land and water use plan, and developing organizational and authorities mechanisms for implementing the program. The full text of these elements is found in Appendix A, and Appendix B, Federal Interaction and the National Interest.

PUBLIC AND GOVERNMENTAL INVOLVEMENT

The CZMA requires extensive public and governmental involvement. As a part of this effort to encourage and inform a full range of interests concerning program development, several tasks were undertaken.

A mailing list of approximately 500 was compiled consisting of "affected" and other interested publics, and governmental personnel. Easily obtainable and comprehensible documents have been prepared to date. These include a brochure, an overview publication, forms for public nominations of areas of particular concern, and a newsletter.

A number of articles have been placed in special newsletters published by the League of Women Voters, the Department of Conservation and Cultural Affairs, and the Diving Association. Use of the media has taken several forms. Newspapers were utilized to inform the public of program status and development through a series of press releases and articles. A newspaper survey "The V.I. Coast - What Do You Think?" was also completed. A monthly CZM newsletter, "Sea Words" was initiated in February 1977. A film "It's Your Coast" (loaned from NOAA-OCZM) was adapted to the Virgin Islands context and televised locally.

Representatives of the CZM program appeared on "Midweek," a weekly television talk show produced by public television and oriented toward timely or controversial issues of local importance.

Three Advisory Committees were formed. A Technical Advisory Committee is a group of scientific and technical persons who provide input from their areas of expertise. An Open Beach Committee established pursuant to the V.I. Open Shorelines Act, advises on policy matters and an Interagency Coordinating Group (monthly meetings of mid-level V.I. agency personnel) has been used to disseminate information concerning program development.

This document is geared to continue the opportunity for private citizens, territorial and Federal agencies to participate in the program development process.

FEDERAL INTERACTION AND THE NATIONAL INTEREST

The CZMA also sets forth a new relationship between Federal agencies and the coastal states

and territories. As a requirement of the Act, Federal agency activities, developments, and assistance must be consistent, to the maximum extent possible, with an approved program. Accordingly, there must be consultation and coordination with relevant Federal interests, and a consideration of the "national interest."

In meeting this requirement, all relevant agencies have been identified and formally contacted and offered the opportunity for full participation. The input and involvement has been continuous, ranging from initial contact and request for clarification of their "interest" to nominations of areas of particular concern, to review of this program (Appendix B). To date there has been no major conflict or dispute.

The national interest has been represented by the various Federal agencies in the consultation and coordination process. As with the Federal agency input, it has been a consideration in developing the program elements such as defining the boundary, designating permissible and priority uses and areas of particular concern, and developing various recommendations. This coordination has also assisted in the Development of Coastal Land and Water Use Plan (Chapter Five), and Developing Mechanisms for Implementation (Chapter Eight).

CHAPTER 3

Context for Planning: Background and Setting

This chapter will focus upon the context in which the Virgin Islands CZMP has been developed. It explores the natural, social, and economic resources and the human activities which make the coastal area important and special. It also outlines the institutional-political setting within which the program has evolved. Through a historical analysis of coastal related legislation and activities, the major legislative acts and existing authorities concerned with coastal zone management are documented. Finally, the major entities of the Virgin Islands Government which are involved in coastal matters are identified and their responsibilities are outlined.

Resource Setting: An Image of the Virgin Islands

The Virgin Islands are culturally and environmentally distinct from the other states and territories of the United States. Since this program intends to reflect the special needs and the unusual environment of the Virgin Islands, it is important to present a description of the islands' physical setting.

The U. S. Virgin Islands are composed of three main islands: St. Croix, St. Thomas, and St. John, and more than 60 smaller islands and cays. The islands are located 1650 statute miles* from New York City, 1150 statute miles from Miami, and 550 statute miles from Port of Spain, Trinidad. (See Figure 3.1).

St. Thomas is located 40 miles north of St. Croix. St. John is situated 3 miles directly east of St. Thomas. Of the 60 smaller islands and cays ranging in size from under 1 acre to almost 500 acres, all but 4 are located in the waters surrounding St. John and St. Thomas.

The Island of St. Thomas covers an area of 28 square miles. The Virgin Islands Department of Health estimates the population to be about 45,000. Numerous offshore islands and cays around St. Thomas, such as Water Island, Hassel Island and Thatch Cay, add approximately 4

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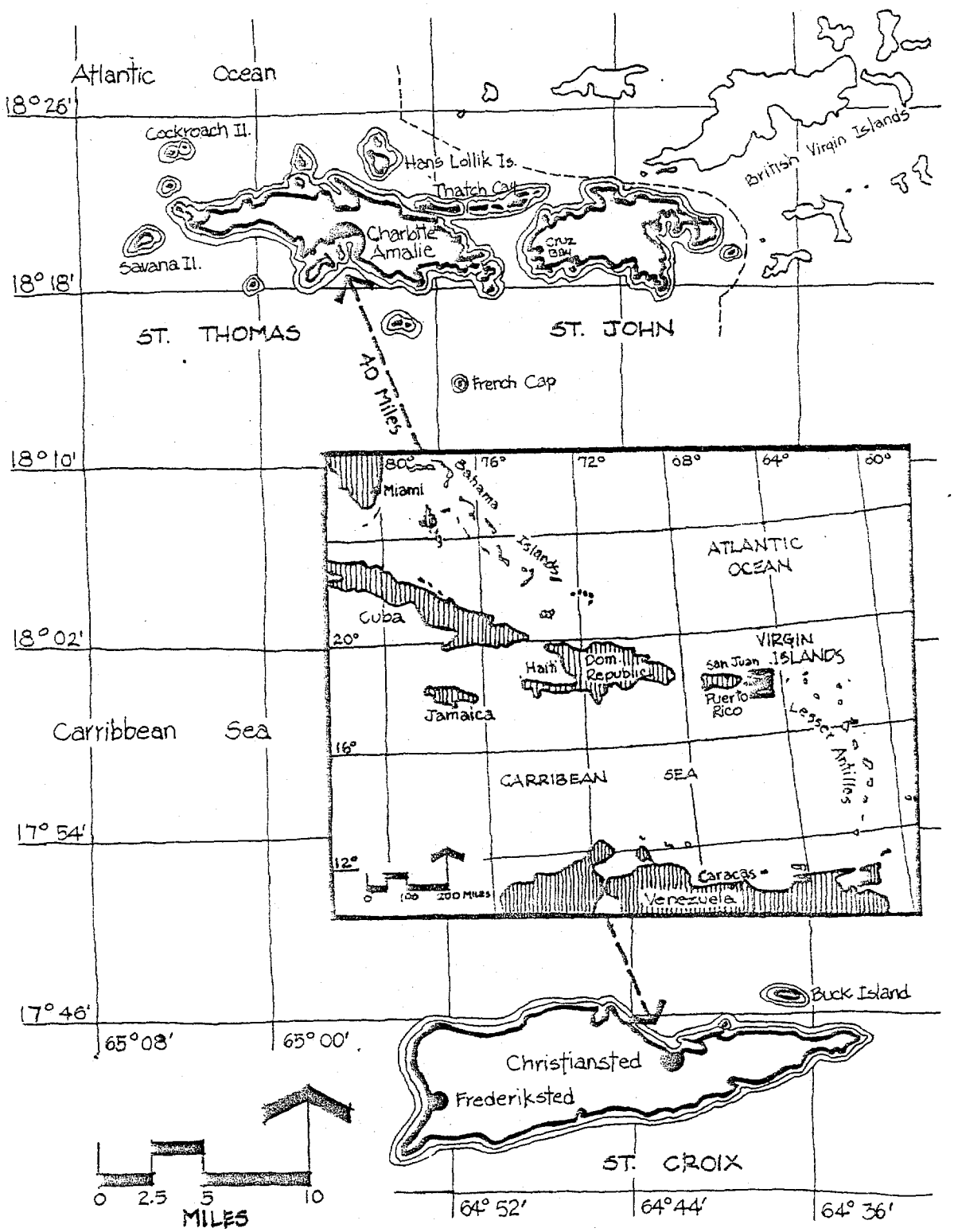
* 1 Statute Mile = 5280 feet.

FIGURE 3.1

THE U.S. VIRGIN ISLANDS



square miles to the land area. St. Thomas is approximately 12 miles long and 3 miles wide at its widest point.

St. Croix is the largest of the U. S. Virgin Islands, 22 miles from east to west and 6 miles at its widest point for a total land area of 84 square miles. St. Croix's estimated population is 48,000.

St. John is the smallest of the three main islands with an area of 20 square miles. The Virgin Islands National Park encompasses one half of St. John's land area and much of the surrounding water. St. John's population is 2,200.

The unusual scale of the U. S. Virgin Islands (total area 135 square miles, 90,000 population) presents rigorous constraints on potential activities and limits options for planning. In small islands systems such as the Virgin Islands very little can occur in isolation. Resources are scarce and particularly fragile. Environmental, visual, social, and economic impacts can be felt immediately throughout the entire island system. It is important to note that because of the small scale of the Virgin Islands, there can be little distinction between the islands as a whole and the coastal areas.

The coastal waters surrounding the Virgin Islands are, with few exceptions, of very high quality. For the islands as a group, rainfall averages 40 inches per year. The average annual temperature is 80 F. The islands are directly in the path of the easterly trade winds, and as a result, the 40 inch rainfall does not reflect the amount of useable water due to warm temperatures, drying winds, and rapid runoff. There are no perennial streams in the Virgin Islands. Extensive alteration of the islands' ecosystems, through burning, mono-crop agriculture (sugar cane), and the subsequent regrowth of scrub vegetation have eliminated free flowing streams. During the periods of intensive rainfall, up to 6 inches in 24 hours, runoff through "guts" can produce serious lowland flooding and a temporary lowering of coastal water quality. As a general condition the coastal waters are exceptionally clear due to the lack of sediments and nutrients from rivers.

The high water quality and clarity in turn provide ideal conditions for the development of coral reefs. Excellent examples of coral reef ecosystem can be found in the waters around all three main islands and many of the offshore cays. In the numerous embayments, sand, derived mainly from the breakdown of reefs and shells, accumulates to form the beaches of the islands. In protected bays the very highly productive ecosystem of red, white and black mangrove can develop. Clear tropical water, coral reefs, white sand beaches and mangrove lagoons comprise the main physical elements that distinguish the coastal environment of the U. S. Virgin Islands.

INTERRELATIONSHIP BETWEEN THE MAIN ISLANDS AND REGIONAL SETTING

Tortola and the other British Virgin Islands are only 1.5 miles northeast of St. John. The international boundary between the U. S. Virgin Islands and the British Virgin Islands also delineates the northeast coastal zone boundary. There exists a strong physical and social relationship between the U. S. and British Virgin Islands. For example, much recreational boating activity originates in St. Thomas but utilizes the excellent sailing of the Sir Francis Drake Passage of the British Virgin Islands. In addition, environmental impacts from dredging and other coastal pollution could probably be felt in the coastal waters of the U. S. Virgin Islands. Thus, stronger coordination of coastal policies between the U. S. and British Virgin Islands is needed.

The nearest point of the Island of Puerto Rico is 40 miles west of St. Thomas. On a clear day St. Thomas, St. Croix and St. John are easily visible from one another. There is, in fact, a very strong visual relationship between the U. S. Virgin Islands, the British Virgin Islands, and Puerto Rico and its islands of Culebra and Vieques.

THREE ISLANDS - THREE PERSONALITIES

Although the three main islands are in close proximity to each other, they are distinct with respect to character and land form. St. Thomas is distinguished by rugged topography and a highly irregular coastline. Over 70 percent of the island's area is comprised of slopes over 20 percent. The steep hills rise to a maximum elevation of 1556 feet above sea level at Crown Mountain. St. Thomas; 53 miles of shoreline is characterized by large expanses of steep rocky shoreline, an excellent and historic harbor at Charlotte Amalie, sand beaches, and a large mangrove lagoon. The island has abundant scenic hills and coasts, but there is little flat land suitable for extensive construction. It also functions as the commercial and tourist center of the Virgin Islands.

The topography of St. John is similar to St. Thomas. Over 80 percent is made up of hillsides with over 20 percent slopes. The striking aspect of St. John is the extensive areas of undeveloped hills and white sand beaches. With a population of only 2,200 and with just over one-half of the land area managed by the National Park Service, St. John presents an extraordinary scene of

tranquility and beauty. The surrounding waters deserve special mention for their colors and clarity. St. John has just over 50 miles of shoreline.

Forty miles of open sea, much of it over 1000 fathoms deep, separates St. Croix from St. Thomas and St. John. Unlike St. Thomas and St. John, which are primarily of volcanic rock, St. Croix is composed of both volcanic and the limestone of former coral reefs. In contrast to the other islands, over 50 percent of St.Croix is comprised of land with a slope of under 10 percent. The 64 miles of St. Croix's coastline are characterized by a "coastal plain" in the southwest, a drowned estuary (now a mangrove lagoon), very steep cliffs in the northwest. an extensive salt pond-sand beach at the southwest point, and fine pocket beaches in the shallow embayments. The most remarkable features of the coastal zone of St. Croix are the magnificent "barrier" coral reefs and algal ridges that fringe much of the island.

THE INDISPENSABLE FUNCTIONS OF THE COASTAL ZONE

It has long been recognized that the coastal zone plays a vital role in the life of every resident of the Virgin Islands. The coastal zone is not simply important: it is the essential resource that makes the islands what they are today. Such diverse demands as petroleum refining, major port activities, as well as breeding grounds for endangered species like the Hawksbill Seaturtle, the Brown Pelican and the Humpback Whale, depend significantly on the coastal resources. The Virgin Islands National Park on St. John, Magens Bay Beach on St. Thomas, and Davis Beach on St. Croix are all examples of the recreational resources of the coastal zone. Enthusiasts of big game fishing, sailing, and scuba diving find unsurpassed opportunities in the Virgin Islands coastal zone.

World record marlin catches and world famous scuba diving and snorkeling locations, such as Buck Island Reef National Monument, make the Virgin Islands Coastal Zone a resource of vast economic and recreation value. Great potential value exists in the experimental mariculture and sea thermal energy projects now on-going in the coastal zone.

Important areas of the historic towns of Charlotte Amalie, Christiansted, and Frederiksted have been designated as Architectural Districts and placed on the National Register of Historic Places. Within these historic areas one can easily view evidence of the Danish influence on the islands. The coastal zone contains 12 archaeological sites that are listed in the National Register. These sites provide a glimpse of early Indian culture on the islands. Scattered throughout the islands are the many remains of sugar plantations. These, too, are historically important and provide the visible link to the islands' agricultural past.

The coastal zone is literally the life line of the islands. From providing seawater for the

desalination plants, or the ports from which most food and goods enter the islands, to providing the resource base for the most important industry, tourism, the coastal zone performs an indispensable function to the people of the Virgin Islands. Hence, developmental potential must rely on careful cultivation of coastal assets.

Economic Setting

The population of the Virgin Islands has tripled in the past sixteen years, from about 32,000 in 1960 to an estimated 95,000 inhabitants in 1976 (Virgin Islands Department of Health estimates). Population growth has been largely attributable to an influx of migrants from the nearby islands, and to a lesser extent, migration from the continental United States. The Planning Office estimates that almost 60 percent of the population growth for the 1960-1976 period was attributable to in-migration rather than natural increase.

This rapid growth has occurred largely as a result of increased employment opportunities associated with both a developing tourism industry, and numerous territorial government policies which have encouraged economic development. As a result of this economic growth Virgin Islanders enjoy a standard of living which is unsurpassed in the Caribbean. Estimated personal income per capita was $3,200 in 1972, approximately the same as for the state of Mississippi which ranked last in per capita among the states. The national estimate for the same year was $4,500.

ECONOMIC BASE OF THE TERRITORY

The single most significant economic activity in the territory is tourism. In 1973, it was estimated that this industry was directly responsible for 20 percent of all employment in the islands. Indirect employment attributable to the tourist industry accounted for an additional 16 percent of the total. Expenditures by tourists in 1975-76 were about $162 million. The industry has grown dramatically since 1960: annual visitor totals have increased from about 200 thousand to well over a million, tourist expenditures have increased to more than six times the 1960 level, and the number of overnight accommodations has grown from 1400 rooms in 1960 to more than 4000 in 1975. Territorial governmental investment incentive programs have greatly aided the development of the tourist industry, especially hotel construction activities. Approximately 40 percent of the overnight tourist accommodations in the islands have been built, or are presently operating with some form of tax exemption. In addition, very low property tax

assessments and rates have encouraged numerous second home developments by off island investors. In spite of the many tax incentives available and increasing level of tourist visitation, several large hotels on St. Croix and St. Thomas have been forced to close in recent years because of low occupancy and high operating costs. In 1976 the hotel occupancy rate for the territory as a whole was about 60 percent.

Overnight hotel visitors continue to play a central role in the tourism industry; however, the relative importance of this type of tourist activity has diminished in recent years. An increased level of day-trip shopping and sightseeing by visitors from Puerto Rico and the many cruise ships which regularly call in the islands has accounted for this relative decline. In spite of some recent shifts in charter boat activity out of the territory to the nearby British Virgin Islands, this segment of the tourist industry has also increased in importance in recent years.

St. Thomas is the focal point for most of the tourist industry in the territory. More than three-fourths of all air visitors to the islands spend some portion of their stay in St. Thomas. In addition, the vast majority of cruise ship calls are also made to St. Thomas. In 1973, tourist expenditures in St. Thomas and St. John accounted for seventy percent of the total tourist spending in the islands.

EMPLOYMENT SUMMARY

Total employment in 1970 was 35,000 and by 1977 it is expected to reach 40,500. The most prominent feature of the employment situation is the large local government sector, about 25 percent of total employment.

The construction and manufacturing sectors have almost doubled in size over the past 10 years. The number of workers engaged in construction has grown from about 2700 in 1965 to 5400 in 1977. Manufacturing employment increased from 1600 to 2900. Most of the manufacturing employment is accounted for by the two large industrial operations on St. Croix, Hess Oil and Martin Marietta Alumina. In addition to oil refining and alumina processing, other manufacturing activities include watch assembly, textiles, and the production of rum.

Retail trade establishments, with an estimated 1977 employment of 5600, represent the largest single industry in the private sector. Hotels and lodging places account for an additional 2900 employees; personal services, 2500; transportation, communications, and utilities, 2200; and finance, insurance, and real estate, 1500.

Self-employed, domestics, and unpaid family workers have constituted a sizable portion of of the employment total in recent years, and these workers comprised about 15 percent (5400 employees) of the total in 1977. The actual size of the agricultural and fishing industries is difficult to determine since most of these workers are self-employed or part-time only. Local estimates for covered employment (estimated 200 employees) undoubtedly understate the importance of the fishing industry in particular. There are presently about 500 licensed commercial fishermen and an additional 450 helpers in the islands. The average number of days fished per month is low (5.2 days), indicating a great deal of part-time employment. The total fish catch for 1974-1975 was valued at about $1 million. In addition, an estimated 50,000 pounds of lobster was harvested from nearby waters. With the exception of several dairy and livestock operations and some small scale truck farming, there is little commercial agricultural activity in the territory.

There have been sharp increases in the unemployment rate in the past three years, from about 5.5 percent in fiscal 1974 (weekly average 2200), to 10.8 percent in fiscal 1976 (4700 per week). By December 1976, the unemployment rate was estimated to be about 8.3 percent with about sixty percent of the jobless residing in St. Croix. The unemployment rate for 1977 is estimated to be about 8.5 percent (weekly average 3800).

FUTURE POPULATION AND EMPLOYMENT

Population projections for the territory indicate that, by 1985, the resident population total may reach 120,000, an increase of about 25,000 over 1976 estimates. More than 60 percent of this increase in expected to occur in St. Croix. Based upon the projected population, the territorial labor force will total more than 54,000 in 1985, and increase of 11,000 workers over the 1976 levels. About 7,000 of these new workers would reside on St. Croix with the remainder on St. Thomas and St. John. Thus, in order to maintain full employment, about 1200 new jobs must be added each year throughout the territory through 1985.

EXISTING SHORELINE USES AND FUTURE NEEDS

A summary of present shoreline uses and a brief assessment of likely future needs is included below.

Recreation, Conservation and Open Space - The coastal zone is perhaps most widely used for recreation. The territory's fine sand beaches are enjoyed by residents and tourists alike for swimming, snorkeling, fishing, picnicking, sunbathing, or jogging. Offshore waters provide some of the best boating, sport fishing, and diving in the world. Harbor and waterfront areas supply

a variety of recreational opportunities for island residents and visitors.

Undeveloped mangroves, salt ponds, and rocky shores provide open space and wildlife habitat and areas for observation and enjoyment of natural features. With the exception of National Park Service land on St. John, very little of the shoreline is protected for conservation use. However, a territorial park system is being planned which could increase the amount of shoreline set aside for conservation and recreation in the future.

Recreational Boating - The growth in the popularity of water sports, especially charter boat sailing and sports fishing, has resulted in the development of approximately 20 marina and boat yard facilities in the Virgin Islands over the past 15 years. While the water sports industries and related facilities are primarily tourist-oriented, they also serve many island residents.

Because of its proximity to the excellent sailing and fishing waters of the offshore cays and the British Virgin Islands, the St. Thomas boating industry has flourished. Extensive marina development has occurred in the East End, notably in the Vessup Bay and Benner Bay areas of the island. Estimated boat population in the Vessup Bay area has increased from 15 in 1962 to 105 in 1975. Increases in the Benner Bay - Lagoon Area have been more dramatic, from eight boats in 1962 to 310 in 1976. Other important boating facility developments in the territory which have experienced similar growth trends include the Charlotte Amalie Harbor area, the Christiansted Waterfront, and Cruz Bay on St. John.

Based upon projected national boating trends, potential for expansion of the boating industry in the Virgin Islands is substantial; however, existing marinas are near capacity and new facilities would be required to accommodate any large increases in activity. The development of the new Southport on St. Croix may allow for some additional marina development in the Gallows Bay area of Christiansted and along the Frederiksted waterfront. Port Authority proposals for the Crown Bay area of St. Thomas and Enighed Pond, St. John include provisions for marina facilities.

Commerce and Industry - The traditional activity centers of Charlotte Amalie, Cruz Bay, Christiansted, and Frederiksted are the locations for most of the commercial activity in the Virgin Islands. Important inland centers include the Tutu area of St. Thomas and central St. Croix. It is expected that most tourist-oriented shops will continue to locate in the existing urban areas. As a result, it is likely that downtown re-development will occur in St. Thomas and St. Croix. Continued traffic congestion and high rentals may encourage some dispersion of locally oriented retail shops into the developing areas of central St. Croix and eastern St. Thomas.

Light industries such as textiles and watch assembly have been encouraged to locate in the territory through a program of tax incentives; however, there are few suitable development sites presently available on St. Thomas. Aside from the public utilities operations, there is no heavy industry in St. Thomas or St. John. A limited area at Sub-Base St. Thomas is presently zoned for this type of industry.

The three large industrial operations on St. Croix are all located on the southern shore and all have adequate space for any expansion they may require. Some adjacent upland areas are currently zoned for industrial uses. A total of about 2,000 acres is zoned for heavy industry on St. Croix. The development of the new Southport may be an impetus to future industrial activity in this area of the island. Because of the port location and the existing industrial activity there, it is likely that St. Croix would be favored over St. Thomas as a location for future industrial development.

Oil Refineries - The Hess Oil Virgin Islands Corporation operates a 750,000 barrel per day oil refinery on the south shore of St. Croix. In addition to the Hess refinery, all necessary permits have been approved for the construction of a 200,000 barrel per day refinery (VIRCO) on a site adjacent to the Hess Complex.

The St. Croix facility places the Virgin Islands among the leaders in refining capacity for states and territories. In comparison, the 37 refineries in the State of California have a total refining capacity of 1.9 million barrels per day. More than one-half of this capacity is accounted for by 15 refineries in the Los Angeles area. The single Hess facility has the capacity to produce about 70 percent of total output of the Los Angeles refineries.

Tourist Accommodations - Overnight tourist accommodations in the Virgin Islands have increased from 1400 rooms in 1960 to more than 4000 in 1975. One-half of these facilities are located on St. Thomas, 45 percent on St. Croix and the remaining 5 percent on St. John. Sixty-six percent of these rooms are located on beachfront sites.

Several hotels in the Virgin Islands are presently closed as a result of low occupancy rates and high operating costs. Even with substantial increases in air arrivals, the large, hotel-type, beachfront facilities may face difficulties as a result of these problems. The necessity for purchasing potable water is often a contributing factor to high operating costs. It does not seem likely that these kinds of tourist accommodations will require expansion. Smaller and less expensive facilities, such as local guest houses and condominium rentals, will likely receive increased use in the future.

Transportation - Transportation uses are among the most crucial land and water uses in the territory. The economy of the Virgin Islands is almost completely dependent upon the tourism industry and external trade. Seaport facilities including cruise ship and commercial docking, warehousing, and distribution centers are more highly developed on St. Thomas than on the other islands. These include extensive port developments at the West Indian Company Ltd., limited V.I. Port Authority facilities at Crown Bay in Charlotte Amalie. Today's cruise ship volume and cargo tonnage are handled by substantially the same physical plant which existed in 1960.

The West Indian Company has proposed new facilities from Long Bay - Charlotte Amalie Harbor. The V. I. Port Authority has proposed new facilities from Crown Bay and Cruz Bay. Existing port facilities at Gallows Bay will be largely replaced upon completion of the new Southport development on St.Croix.

Air transport capabilities for the territory will be assured upon completion of improvements at Truman and Hamilton airports. The Charlotte Amalie waterfront also includes the main highway transportation route for the island. Future requirements for land transportation uses are dependent in part upon decisions regarding public transport. A successful public transit system will likely lessen congestion and reduce expansion needs. Increasing demands for both airboat and inter-island ferry facilities may require additional shoreline areas for parking, loading, etc.

Agriculture and Fishing - The territory produces only a small part of its own foods needs, yet it has some potential to expand production. About 85 percent of the land suitable for farming in the Virgin Islands is located on St. Croix. Crop farming has been declining consistently for a number of years and only a few small scale truck farming operations presently exist. Aside from some grazing and related livestock uses, there is little agricultural activity in the coastal areas. Territorial meat production is currently about 5 percent of total consumption. Recent studies have indicated that there is some potential for expansion of livestock operations on St. Croix.

As with agricultural products, local demand for fish and seafoods far outstrip local production. It is estimated that current harvesting of traditional species approximates the maximum sustainable yield. While some increase is possible by harvesting non-traditional species, harvest increases for most species will be modest at best. Recent studies have shown that improved equipment and marketing facilities can increase the profitability of local fishermen. Shoreline uses which are directly related to the fishing industry include the commercial marinas and boat yards throughout the territory as well as numerous areas along the urban waterfronts which are used for selling fish, boat storage, etc. In addition, there are many areas of the shoreline (including some sandy beaches) which can be considered to be traditional use areas for boat building, repair and storage.

Public Utilities - Electric power generation and desalination facilities are highly centralized and occupy only two sites in the Virgin Islands. All production facilities on St. Thomas are located at Krum Bay with water storage tanks nearby in the Subbase area. While some additional desalinization capacity may be necessary in the future, no additional need for production sites is anticipated. The St. Croix facilities in Christiansted are ample for expected demand there. The Island of St. John is served by underwater electric cable and water barged from St. Thomas. Some additional water storage areas may be required there; however, no production facilities are

contemplated. Groundwater supplies now being developed on St. John will eventually be used to replace the barged water supply.

The wastewater collection and treatment systems on St. Croix are nearing completion and no major extensions are planned. Two additional treatment systems will be added for the East End of St. Thomas, in the Smith Bay area, and a large treatment plant in Bovoni in the vicinity of the Mangrove Lagoon. This latter system will eventually serve most of the Turpentine Run drainage basin. The existing plant south of Truman Airport will be relocated as part of the airport improvements plan; however, the new site is in the same general area. A treatment plant for the Cruz Bay area of St. John is planned in the vicinity of Enighed Pond.

Solid waste disposal is a major problem for all three islands. The present St. Thomas landfill site at Bovoni is near capacity and a new disposal method or site must be found soon. Similar problems exist on St. John and St. Croix.

Residential Areas - Population increases have brought about dramatic changes in residential land use patterns throughout the territory. Charlotte Amalie, Cruz Bay, Christiansted, and Frederiksted continue to be important centers for commercial activity; however, their importance as residential centers has declined in recent years.

Most new housing developments in the last 10 years have located in the formerly rural countryside, contributing to urban sprawl conditions in some areas. On St. Thomas, the most striking changes are those which have occurred on the eastern end of the island. In 1960, the combined population of East End, Red Hook, Frenchman's Bay, and New Quarters was 900; the estimated population of these areas in 1975 was 18,500. Growth in the Cruz Bay area of St. John has accounted for almost all of the population increase on that island. Central St. Croix (Company, Queen, King, and Prince Quarters) has grown from 5,200 inhabitants in 1960 to an estimated 29,000 in 1975.

An increasing need for land for residential uses is a certainty. Expected population increases will result in the need for about 7200 additional housing units in the territory by 1985. Because of the costs involved, it is likely that effective demand for residential land will be drastically curtailed in the absence of Federal or territorial subsidies. Demand for retirement and second homes will continue to be available at very high prices. The topography of many coastal areas precludes their use for intensive residential development; therefore, most new housing must be located inland.

EXISTING ZONING

The zoning districts for the Virgin Islands are shown in Figures 3.2, 3.3, and 3.4.* Important characteristics of the districts are summarized below. It should be noted that, in most instances, there are a wide variety of uses which are permitted as a matter of right for each zoning district.

Agricultural Districts (A-1 and A-2) - The primary purpose for the A-1 District is to maintain potential agricultural lands. Each parcel of property must have a minimum area of forty acres. There is a maximum of two dwelling units per parcel. The A-2 designation is for acres suitable for small scale agriculture such as truck farming. The minimum lot size is two acres with not more than two dewlling units per lot.

Residential Low Density (R-1 and R-2) - The minimum lot size for the R-1 District is 1/2 acre. Up to two dwelling units per lot are allowed (maximum 4 dwelling units per acre). Minimum lot size requirement for the R-2 zone is 10,000 square feet with a maximum of 2 dwelling units per lot (maximum of 8 dwelling units per acre). The maximum height for structures in both districts is 2 stories.

Residential Medium Density (R-3 and R-4) - The R-3 district is primarily for medium density hotels and multi-family dwellings. The maximum number of persons per acre for residential structures is 80. The minimum lot size per parcel is 6,000 square feet and the maximum height for structures is 6 stories. In addition, at least thirty-five percent of the parcel must be reserved for usable open space. The minimum lot size for R-4 is 3,000 square feet and the maximum number of persons per acre is 120. The height limitation is 3 stories.

Residential High Density (R-5) - The maximum number of persons per acre is 160 with a minimum lot size of 10,000 square feet. Thirty-five percent of the parcel must be reserved for usable open space. The height limit is 8 stories.

Business Districts (B-1 through B-4) - The business zones range from B-1, the central business districts, to B-4, business-residential areas. These districts cover a range of business activities from downtown shopping areas to neighborhood convenience centers.

Commercial District (C) - The commercial zone includes those uses which are business-oriented but with some characteristics of light industrial activities. For example, these uses include such activities as service stations, automobiles dealers, warehouses, and laundries. Many of the permitted uses in the commercial district are also included in the light industrial zone (I-2).

*These figures were included in the Draft EIS.

Present and Future Shoreline Uses

The economic and population growth that has occurred in the Virgin Islands since 1960 has resulted in extensive development of many areas of the coastline. The principal mechanism which has been used to allocate and manage land uses in the territory is the Zoning Law. Since many future land and water uses will be dependent in part upon development patterns associated with the present zoning, the existing system is an integral part of any future planning process.

ZONING

ZONING LAW

The Virgin Islands' Zoning Law establishes seventeen separate zoning districts, ranging from agricultural, residential, industrial, and waterfront to public use classifications. In all of the districts, a variety of uses are permitted as a matter of right, as accessory, or under specified conditions. The present Zoning Law was enacted in 1972 (Act. No. 3284). All zoning changes or amendments require legislative and gubernatorial approval.

The Department of Public Works, through a Zoning Administrator, is responsible for the administration and enforcement of the provisions of the Zoning Law. The Administrator is vested with some limited discretionary approval authority over permits for the use of land. The department reviews all permit applications, issues all certificates of occupancy, interprets the zoning district maps, institutes legal action to enforce the provisions of the law, and makes recommendations to the Planning Office and Legislature for changes in the Law.

Appeals of decisions of the Zoning Administrator and grants of variances are reviewed and decided upon by the Board of Zoning, Subdivision and Building Appeals. The Law sets specific procedures for Board action including a requirement for findings to be made on all decisions. A two-thirds majority vote of the members of the Board is required to reverse an order to the Zoning Administrator. Appeals of decisions of the Board are taken directly to the Virgin Islands District Court.

The Planning Office authority in the administration and enforcement of the Zoning Law involves the following: reviewing applications for specified types of projects and submitting its findings to the Zoning Administrator, preparing and submitting advisory opinions to the appeals body, and preparing reports and conducting public hearing on proposed amendments to the Zoning Law and Zoning District Maps.

Industrial Districts (I-1 and I-2) - The heavy industry zone, I-1, includes those uses such as Hess, Martin Marietta, and the Water and Power Authority plants. The light industry zone (I-2) encompasses a wide range of uses such as warehousing, light assembly, textile manufacturing, contracting, as well as many of the same uses permitted in the commercial district.

Waterfront Districts (W-1 and W-2) - The law establishes two waterfront districts, W-1 Waterfront-Pleasure and W-2 Waterfront-Industrial. The W-1 zone is primarily a recreation zone, and permitted uses include marinas, marine terminals, parks and recreation areas, hotels, and guest houses. The Waterfront Industrial District (W-2) permits a variety of marine-related and industrial uses.

Public District (P) - Publicly owned properties fall into this category. Uses may vary widely, from recreational areas to schools, airports, offices, sewage treatment and solid waste disposal.

OVERVIEW OF ZONING IN THE VIRGIN ISLANDS

Seventy percent of the Island of St. Thomas is zoned for low density residential uses (R-1 and R-2). The town of Charlotte Amalie is the primary business and commercial center. Less than 5 percent is zoned agricultural and less than .5 percent is zoned industrial. The waterfront districts comprise about 4 percent of the island. Most of this total is made up of small W-1 parcels. Excluding the Charlotte Amalie town area, shoreline zoning is characterized by extensive low density residential districts (R-1 and R-2) with numerous smaller enclaves of medium density residential (R-3) and waterfront-pleasure (W-1). All of the offshore islands and cays are zoned R-1 or P.

More than one-half of the land area of St. John is National Park Service land and is zoned P. There is very little development of any kind within the park. Most of the inholdings are low density residential areas (R-1 and R-2). For the island as a whole, about 42 percent is zoned R-1 or R-2. Approximately 3 percent is zoned for medium density residential (R-3 and R-4) uses. Business uses comprise about 1 percent and waterfront-pleasure districts are 2.5 percent. Aside from a few acres of W-2 zoning, there are no industrial districts on the island. Most of the shoreline is zoned P while most of the privately held coastal parcels are either low-density residential or waterfront-pleasure.

Low density residential districts comprise 54 percent of the land area of St. Croix. Medium density residential is an additional 7 percent. Almost 25 percent is zoned agricultural and about 1 percent is business and commercial. Slightly more than 5 percent is zoned for industrial uses with two-thirds of this zoned for heavy industry. The waterfront districts are about 2 percent of the total area. The W-1 district makes up almost all of this total. The St. Croix coastline is

characterized by large areas of low density residential zones with large public, industrial, and agricultural districts along the south shore. There are fewer W-1 Districts on St. Croix than on St. Thomas; however, the total W-1 acreage on St. Croix is larger.

MAJOR PLANS/PROPOSALS IN THE COASTAL ZONE

As a result of the recent economic slowdown in the Virgin Islands and in the United States, many of the development pressures upon the shoreline have subsided. In spite of this easing of pressures, there are several major planned/proposed projects which, if carried out, will significantly impact both the economy and the coastal environment of the territory. The major development proposals for the Virgin Islands coastal areas have been identified and a brief description of each is included below. This listing includes:

a) projects for which territorial and/or Federal permits have already been approved or are presently being sought or

b) projects for which extensive engineering and/or feasibility studies have been completed and which are presently being considered.

There are nine major development proposals for the Virgin Islands shoreline which are now under consideration or awaiting start of construction. The location of these proposed projects is shown in Figure 3.5.

St. Croix

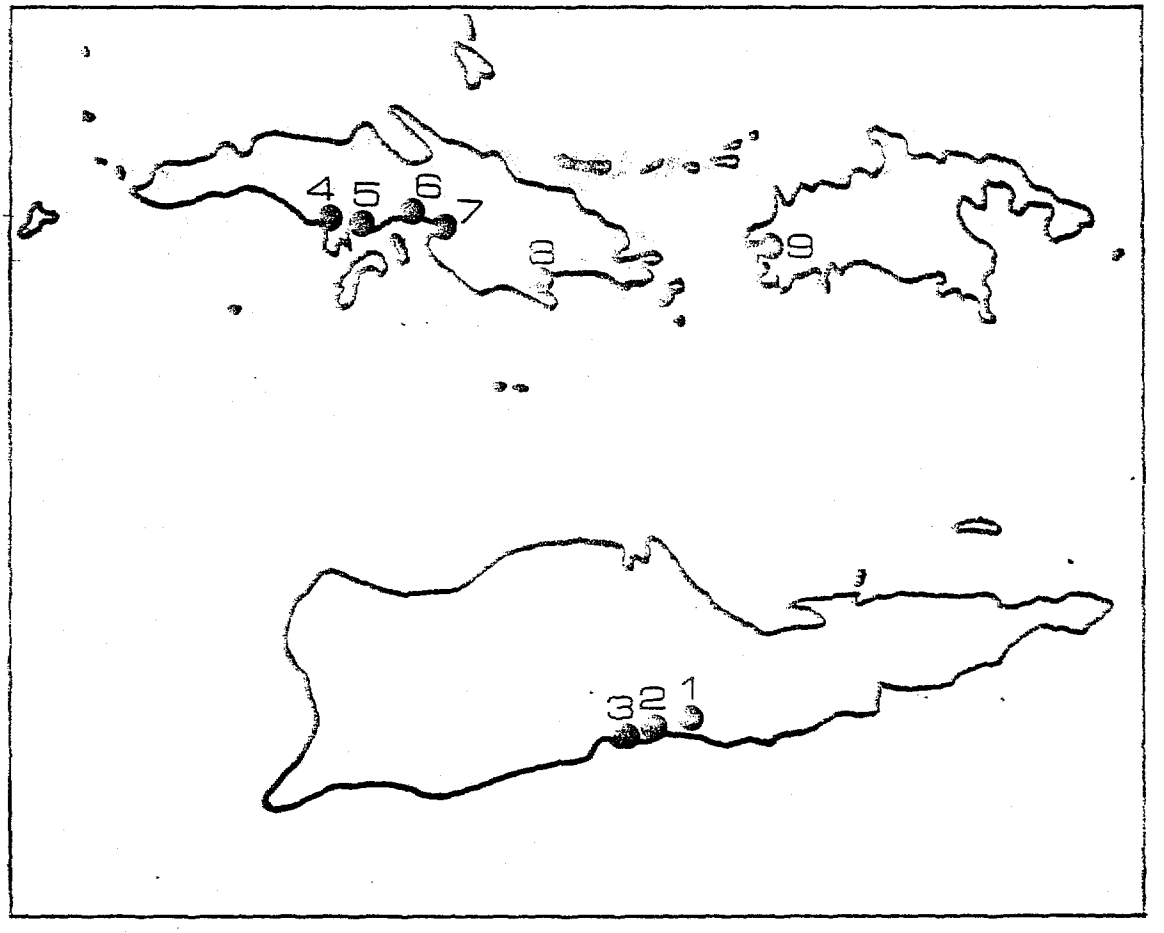
(1) Virgin Islands Refinery Corporation (VIRCO). All permits have been approved for a 200,000 barrel per day petroleum refinery and a submarine pipeline extending 2 miles offshore to a marine terminal. The 300 acre site is located adjacent to the Hess Oil Refinery on the south shore of St. Croix.

(2) Hess Oil Virgin Islands Corporation (HOVIC) Offshore Terminal and Submarine Pipeline. This project consists of a crude oil terminal 2 miles offshore from the existing HOVIC Refinery and a connecting submarine pipeline. Very large crude carriers (oil tankers larger than 200,000 dead weight tons) would be unloaded at the offshore terminal. U. S. Army Corps of Engineers approval is pending.

(3) St. Croix Southshore Public Port. New public port facilities to be operated by the Port Authority will be constructed by HOVIC between the existing Hess and Martin Marietta ports. The new facilities will include: 1400 feet of pier sheet-pile to accommodate the mooring of vessels up to 32 foot draft;

FIGURE 3.5

DEVELOPMENT PROPOSALS



ST. CROIX

1. Virgin Islands Refinery Corporation (VIRCO)
2. Hess Oil Virgin Island Corporation (HOVIC) Offshore Terminal and Submarine Pipeline
3. St. Croix South Shore Public Port

ST. THOMAS

4. Truman Airport Improvements
5. Port Authority Crown Bay Development
6. Veterans Drive Waterfront Improvements
7. West Indian Company Ltd. Long Bay Development
8. Mangrove Lagoon Area - Waste Water Treatment Facility

ST. JOHN

9. Enighed Pond - Cruz Bay

100,00 square feet of asphalt paving for the pier; complete "roll-on," "roll-off" facilities for handling containerized cargo; a 30,000 square foot warehouse; a gatehouse; facilities for U.S. Customs; and asphalt paving for the access road from the port to the Cross Island Expressway. This project will require some dredging between the existing Hess and Martin Marietta channels. Project approval by the U. S. Army Corps of Engineers is pending.

St. Thomas

(4) Truman Airport Improvements. This project has been approved and construction is scheduled to commence in mid-1977. Eight and one-half million cubic yards of fill will be used to create a site for a lengthened runway and new terminal in the Lindbergh-Brewer's Bay area. Completion of this project will allow the St. Thomas airport to accommodate much larger jet aircraft than at present.

(5) Port Authority Crown Bay Development. Preliminary planning and feasibility studies have recently been completed. The plans call for the development of between 29 and 59 acres of fill in the Crown Bay-Sub Base area for cruise ship docking, cargo and warehousing, commercial space and a complete marina facility.

(6) Veteran's Drive Waterfront Improvements. The Department of Public Works has prepared a number of alternate highway improvement plans designed to correct traffic congestion problems along Veteran's Drive on the Charlotte Amalie waterfront, and to improve access between the downtown area and East End of St. Thomas. All of the alternatives would require filling a portion of the harbor and some relocation of existing facilities in the vicinity of the Senate Building and Frederiksberg Point.

(7) West Indian Company Ltd. Long Bay Development. Extensive development proposals were outlined in 1971 including large-scale dredge and fill activities in the Long Bay area with some of the filled land being deeded to the territory. A Memorandum of Understanding was executed in 1972 between the U. S. Department of the Interior, the Virgin Islands Government, the West Indian Company Ltd., and other

parties of interest which affirmed the 1917 treaty rights of the West Indian Company Ltd. to dredge and fill specific areas of the harbor. The Memorandum was amended in 1975 to transfer certain rights and obligations of the Department of the Interior to the Virgin Islands Government.

Under terms of the agreement, a total of 29 acres may be filled in the vicinity of Frederiksberg Point, Long Bay Beach, and at Havensight Point. The fill material would be taken from Long Bay and Gordon Bay. The proposed project would provide new berthing spaces for cargo and cruise vessels and new land for waterfront, commercial, and recreation facilities. About 2.5 acres of the filled land would be transferred from the Company to the V. I. Government for recreational uses. In addition, a portion of the filled area would be made available to the government to widen the existing waterfront highway. All remaining lands would be owned by the Company and retained for commercial development. The Company has agreed to relinquish all other claims for dredging and filling rights under their concession if allowed to carry out this project.

(8) Mangrove Lagoon Area - Waste Water Treatment Facility. The Department of Conservation and Cultural Affairs has recently completed plans for a large wastewater treatment facility to be located in the vicinity of the Mangrove Lagoon on the east end of St. Thomas. This treatment plant and its associated interceptors will allow for the eventual abandonment of the nine existing package plants which serve the Turpentine Run drainage basin.

St. John

(9) Enighed Pond - Cruz Bay. A Port Authority proposal calls for the development of Cruz Bay, St. John, primarily as a bathing beach with passenger operations to continue at the present ferry dock. The Enighed Pond area would be developed for marina facilities, cargo handling, and recreation. The pond would be dredged, with about 12 acres filled for a recreation area. Little Cruz Bay (Creek Area) would be developed for light cargo, boat repair and maintenance.

Public Attitudes Regarding Shoreline Use

Two surveys were conducted to assess public attitudes toward shoreline use, a newspaper questionnaire and a household survey. The self-administered newspaper questionnaire was carried out through the daily newspapers on St. Thomas and St. Croix. The household survey was conducted by personal interviews on all three islands. Both surveys indicate that the public appears to be divided primarily along educational lines regarding the relative importance of econimic, natural and amenity values. Those with higher levels of education tend to emphasize conservation and recreational development; others tend to place greater emphasis on economic development. This division is greatest with respect to future coastal development over-all, but is also reflected in differing preferences within specific categories of development. Public opinion regarding coastal development priorities is divided along geographic lines also. Differences among the islands tend to reflect differences in both resources and the feasibility of development options.

TERRITORY-WIDE DEVELOPMENT PRIORITIES

While there is apt to be considerable disagreement among population sub-groups as to the importance of economic development, there is a consensus territory-wide that agriculture and food processing industries should be encouraged.

The extent of support for tourism varies among the Islands, but respondents across the territory tend to prefer hotel/guest house and cruiseship related development over other forms of tourism.

The great majority of respondents agree that coastal recreational development is important. There is considerable support throughout the territory for the improvement of beach access and, to a lesser extent, beach facilities. The newspaper survey provided considerable information about existing patterns of recreational activity, including a listing of beaches where access is considered an issue. Poor roads or an exclusively private atmosphere are the most frequently cited obstacles, although the lack of facilities and safety are also concerns.

ISLAND DEVELOPMENT PRIORITIES

ST. CROIX

Recreational development, and beach access in particular, is of greater concern on St. Croix than on the other two islands. Respondents from Christiansted voiced the strongest concern. Compared with St. Thomas and St. John, concern about conservation is greater, but less interest is expressed in commerce and industry. Agriculture and light industry are clearly the most preferred and widely supported development options. However, the precentage of population favoring heavy industry is larger than on St. Thomas or St. John.

Interest in fishing and tourism is weaker in St. Croix than the other two islands. Attitudes toward tourist development are reflective of the territorial preference for hotel/guest houses and cruise ships. Support for condominium/second home development is stronger on St. Croix than on the other islands.

ST. THOMAS

The survey data indicate that over-all development priorities are the least clear on St. Thomas. Industrial and conservation uses are a high priority and while recreational and residential development are not a high priority, they are recognized as being important. Respondents are more united in their support for agriculture, light industry, and, to a lesser extent, tourism as modes of economic development. Regarding tourism, there was agreement with the territory-wide preference for hotel/guest house and cruiseship development. Respondents also support other territorial-wide recreational concerns. Beach access is paramount, but beach facilities, fishing piers and waterfront parks are concerns in certain areas.

ST. JOHN

With respect to overall development priorities, respondents from St. John seem to be in considerable agreement. Residential and commercial development are of greatest concern. Interest in conservation is less widespread. Respondents have very little interest in industrial use, giving strong support to the development of agriculture, tourism and fishing. Interest in fishing and tourism is stronger on St. John than anywhere else in the Virgin Islands.

With respect to tourism development, respondents express a clear support for the territory-wide preference for hotel/guest houses and cruise ships. In addition, there is equally clear and strong support for developing boating. While recreational development is rarely considered to be a first priority, it is widely acknowledged as important. There is considerable support for the development of waterfront parks and fishing piers.

SHORELINE PROTECTION

Seventy percent of the household respondents and ninety-seven percent of all newspaper respondents feel some shore areas need protection from over-development. Less than eight percent of those questioned are opposed to shoreline protection measures. Rationales for protection include both statements of appreciation for an area's amenity qualities and concern about possible negative effects induced by development.

When asked which areas were in need of protection, respondents nominated those areas highly valued in terms of recreation, scenic, and/or natural qualities. Sand beaches, harbors with waterfront parks, and undeveloped mangrove areas are given the highest priority. Strong support is also given to the protection of some undeveloped salt ponds and rocky shores, as well as intensively developed harbor areas. Those surveyed generally feel new construction could best be accommodated in areas which already have some development, particularly harbor or industrial areas and low relief or steep rocky shorelines. To a lesser extent, gravel or rocky beaches and saltponds are also considered suitable for development.

Political/Institutional Setting

POLITICAL AND GOVERNMENTAL HISTORY

The Virgin Islands is an unincorporated territory of the United States which was purchased from Denmark in 1912. As such, the islands are subject to the power of the U. S. Congress which has the authority to enact suitable rules and regulations to govern the territory and to delegate powers to it. A series of Federal Rules and Regulations, Executive Orders of the President, and Congressional Acts have been instrumental in the evolution of the Virgin Islands Government. Those actions most related to land use, and coastal issues are discussed below. A "Chronology of Coastal Related Activities," Table 3.1, is found at the end of this section and illustrates the progression of events towards the development of a coastal zone management program.

From 1917 to 1936, the Islands were governed by the Temporary Government Act of 1917. The Act vested responsibility for governing the Virgin Islands with the Department of the Navy. Essentially, it continued the Danish style colonial government by retaining the Colonial Law of 1906 in full force and effect.

The Organic Act of 1936 created a civil government, transferring responsibility from the Department of the Navy and placing it within the Department of the Interior. Among other things, the Act extended the electoral franchise, created a territorial government and a new legislative assembly, and granted the territory the power to control the use of all public and private properties within the territory. Subsequently, all property acquired by the United States from Denmark but reserved by the United States for public purposes was placed under the control of the Government of the Virgin Islands by an Executive Order of the President. With it, the authority to acquire, possess, administer, govern, alienate and encumber property was granted.

As a result of the 1936 Organic Act, a 1939 amendment, and a 1942 Executive Order, most laws of the United States for the protection and improvement of the navigable waters were made applicable to the Virgin Islands, including navigation and inspection laws. Accordingly, the Legislative Assembly was granted the power to enact navigation, boat inspection, and safety laws of local application. Those laws or portions thereof not made applicable to the Virgin Islands dealt with coastwise laws of the United States, and Federal laws levying tonnage duties, light money, or entrance and clearance fees.

The Revised Organic Act of 1954 amended the rules and regulations contained in the 1936 Act and restructured the framework of the organization and operation of the government. It provided for a centralized government with the executive power vested in a Governor, and legislative power in a unicameral legislature. The Act also extended the authority of the Governor to transfer administrative and management authority between territorial agencies.

The Elective Governor Act of 1968 (P.L. 40-496) furthered self-determination for the Islands. The Act amended the Revised Organic Act by providing for the popular election of the Governor and Lieutenant Governor, thus ending appointment of the territory's Governor by the President.

COASTAL RELATED STUDIES

In 1967, the Virgin Islands Planning Board, through its consultant Reginald Isaacs, undertook a study for the conservation of beaches. This was the first attempt to deal specifically with coastal resources in the islands. That study made several recommendations with respect to needed policies toward resources and actions required of private enterprise, citizens, and the Government

of the Virgin Islands. The Planning Board, however, failed to implement any of the recommendations contained in the report.

A report entitled The Islands - Selected Resources of the United States Virgin Islands, was prepared for the Department of the Interior in 1968. The study concluded that the resources within the shoreline zone were the islands' most important, including such assets as sand beaches, access points to the water for boating, coral reefs, and the offshore islands and cays.

In 1969, the Legislature demonstrated its interest in the marine future of the territory by supporting two undersea research programs, Tektite I and Tektite II. In early 1970, Governor Melvin H. Evans called for a program aimed at accelerating the development of the island as an international center for underseas research and development. A "Virgin Islands Year of Ocean Resource Development" was proclaimed for 1970, and a Marine Resources Council was formed. Its mandate was to prepare a report detailing how the U. S. Virgin Islands could best utilize its marine resources. The report, The U. S. Virgin Islands and the Sea (1970), substantiated the findings and recommendations of the earlier "Islands" report done for the Department of the Interior.

Specific policy recommendations were made for the use and development, conservation, and planning of the islands' coastal resources. One of the recommendations involved the initiation of a coastal zone study designed to develop a management plan for the coastal zone. Some of the recommendations contained in that report have been implemented with the passage of legislation regulating certain activities affecting, or located within, coastal areas.

COASTAL RELATED LEGISLATION

Upon its creation in 1950, the Virgin Islands Planning Board was made responsible for the preparation of a comprehensive plan to guide the future use of public and private lands. The Planning Board prepared a General Physical Plan for the Virgin Islands in 1964 delineating potential recreation and commercial areas along the coastline and identifying those areas with development constraints. Although the plan was never officially adopted by either the Legislature or the Governor, it was used occasionally by the Planning Board as a guide for decision-making on land use matters.

While the power to control the use of public and private properties in the territory had existed since the enactment of the Organic Act of 1936, it was not until 1963 that any land use controls (zoning regulations) became effective. The Zoning Law established several districts throughout the islands, but it did not provide for special treatment of the coastal areas. Dispite

the fact that zoning had been instituted in a territory through a legislative action, no comprehensive or general development plan and policies concerning the overall growth of the islands were ever formally adopted by the Government.

A Department of Conservation and Cultural Affairs (DCCA) was established in 1968 (Act N. 2238). The Department is granted the authority and jurisdiction to exercise general control over the enforcement of laws relating to conservation and the development of natural resources. Nearly all of the territorial regulatory authorities concerning the seaward side of the coastal areas is invested in DCCA. Among its other duties, the Department has the responsibility to administer, and enforce laws relating to: fish and wildlife and water resources, air and water pollution, flood control, mineral and other natural resources, outdoor recreation and parks, and preservation of historic and architectural heritages.

The Virgin Islands Planning Office (VIPO) was created in June of 1970 (Act 2274) and replaced the V.I. Planning Board, which had similar responsibilities. The Act created the Planning Office as an administrative unit within the Executive Office of the Governor, and required the VIPO to perform a variety of functions including;

1. formulating long range plans and policies for the orderly and coordinated growth of the Virgin Islands;
2. formulating a long range comprehensive plan for the physical, economic and social development of the Virgin Islands; and
3. encouraging coordination of the planning activities of all territorial agencies and bodies.

Intense development pressures began to mount in the 1960's and continued into the 1970's. Increasing resort and second home development took place along many beaches and much of the shoreline. Concern was expressed over the burgeoning unplanned growth and threatened loss of public use and access to the coastline. The public outcry against restrictive beach policies manifested itself in a Free Beaches Committee, which sought public and legislative actions against such practices.

In response to the situation, the Legislature passed the Open Shoreline Act (Act No. 3063) in June of 1971. The Act prohibits the maintenance or construction of any obstruction within the defined shoreline area which could interfere with public rights of use, enjoyment or lateral movement. For the purpose of the Act, the shoreline is defined as the area from the seaward line of low tide inland a distance of 50 feet, or inland to the seaward boundary of natural vegetation or natural barrier, whichever is the shortest distance. Permits for such construction in these areas may only be issued under very restrictive conditions. The Act also prohibits the taking

of sand, rock, mineral, marine growth or other natural products of the ocean (except fish and wildlife) from the shoreline without first obtaining a permit. The responsibility for administering the Act and issuing permits is invested in the Department of Conservation and Cultural Affairs.

The constitutionality of the Act in general, and the public right of customary use, were upheld in the Bolongo Beach litigation (No. 75-1242, 3rd Ct., 1976). This action affirmed the public's right to utilize the beach area of a resort-hotel which sought to prohibit such activity.

In addition to the prohibitions placed upon activities within the shoreline, an Open Beaches Committee was established as a provision of the Act. The Committee was delegated responsibility to:

1. conduct a survey of shorelines to establish the boundary between public and private property;
2. prepare surveys showing routes of public access to all sandy beaches and recommendations for easements where no access exists; and
3. classify all beaches and other segments of the ocean for wildlife, marine and estuarine protection.

The Committee was not convened until January, 1976. Some of its tasks are being subsumed by the development of the CZMP by the Planning Office. This committee has assumed the role of advisory committee for the CZM program development.

In 1971, the Earth Change Law (Act. No. 2967) established an environmental protection program to control and eliminate soil erosion and to restrict land alteration activities which were adversely affecting the natural resources of the islands. The law encompasses all of the lands and waters comprising the watersheds of the islands and includes all land development Acts that affect changes in the condition of the watershed areas. As a result, practically all land alteration activities in the Virgin Islands are covered within the Act and subject to the permit requirements set forth therein. The Act clearly applies to lands within the coastal zone and to land alteration activities which affect the coastal areas. Indeed, one of the stated purposes of the Act is to conserve the coastal resources of the islands.

The Earth Change Law called for the promulgation of rules and regulations to implement the policies set forth in the legislation. These rules and regulations establish the practices and procedures for complying with the Act's requirements. This Act, together with the rules and regulations, comprises an important element in the environmental protection program of the Virgin Islands.

Revisions in the Zoning Law passed in 1972 (Act No. 3284) made that Act one of the more

important elements in the existing system of land use and environmental controls in the Virgin Islands. This zoning law, with amendments, will provide on the basis for implementing the approved management program.

The Shoreline Alteration and Dredging Control Act of 1973 (Act No. 3404) was passed by the Legislature to control the dredging and mining of sand, gravel, and coral from the beaches and shorelines of the Virgin Islands. At the time of adoption, the Federal government still retained proprietary rights to the submerged lands, tidelands and filled lands adjacent to the coastlines of the islands. The 1973 Act was intended to permit the territorial government to exercise the maximum legislative juridsiction it possessed over such lands. Subsequently, the Federal government has transferred ownership of most of these lands to the territorial government (notable exceptions to the transfer include National Park Lands on St. John, Buck Island, and Naval Operations Area near Frederiksted).

In 1975, the Legislature amended the 1973 Act, redesignating it as the Trustlands, Occupancy and Alteration Control Act (Act. No. 3667). The intent and policy of the Act declares that it is in the public interest to protect, perserve, maintain, and improve the transferred trustlands and other submerged and filled lands for the benefit of the public and to foster enjoyment of natural resources.

The 1975 Act deals primarily with submerged lands and sets up a process (administered by the Department of Conservation and Cultural Affiars) to regulate their occupation and alteration by filling, dredging, mining, construction, or other means. The area covered by its provisions also includes some fastlands. The Act is applicable to all land and water seaward of the line of mean high tide, including all artifically made, filled in, or reclaimed lands, salt ponds and marsh which were formerly permanently or periodically covered by water, and extends three geographic miles seaward. The legislation also provides for the regulation of all of the Federal submerged lands conveyed to the Virgin Islands. Regulation for these lands, including alterations or occupancy by private and public agencies, are embodied in the required permits issued by the Governor and Legislature.

The 1975 Act, together with the Earth Change Act and the Open Shorelines Act, provides substantial statutory authority for the control over use, development, and alteration of the land and water resources of the coastal zone. This Act together with the implementing regulations establishes a territorial counterpart to the Army Corps of Engineers permits which are also required for the development or alteration of certain coastal lands and waters in the territory.

Continued concern for the quality of the coastal environment of the Virgin Islands was demonstrated with the passage of the Water Pollution Control Act (Act No. 1979) and the Oil Spill Prevention and Pollution Control Act (Act No. 3568). Both are administered within the Department of Conservation and Cultural Affairs.

The Water Pollution Control Act, through a series of amendments, establishes a regulatory program to control pollution of the surface and underground waters of the Virgin Islands. The Act establishes standards of water quality and pollutant discharges throughout the Islands (including the territorial waters in the coastal zone). It also provides the authority to exercise land use controls intended to protect and preserve the islands' water quality. As such, it provides an additional independent basis for exercising territorial police power to achieve certain environmental objectives.

The Act prohibits discharges of pollutants into the waters of the Virgin Islands without treatment to a specified level and authorizes the regulation of both new and existing sources of water pollution. The Act was amended in 1976 to allow for the enforcement of the Federal Water Pollution Control Act, as amended, relating to the Virgin Islands' participation in the National Pollution Discharge Elimination System (NPDES).

The policies and objectives of the Act are carried out through a permit system as defined in the Federal Regulations and Guidelines. Discharge of pollutants without a lawful permit is illegal, as is the conduct of a variety of activities concerning the construction, increase, enlargement, expansion or modification of facilities which would discharge or cause the discharge of pollutants in amounts, volume, strength or nature in excess of that which is currently permitted. Thus, not only are discharges themselves regulated, but also facilities which discharge pollutants are regulated.

The Oil Spill Prevention and Pollution Control Act of 1974 seeks to protect the marine and coastal environments from damages caused by industrial or commercial discharges of petroleum products or other equally harmful substances. The primary objective of this Act is to preserve the waters and shorelines of the Virgin Islands as a source of public and private recreation. Additional objectives include protection of environmental resources, preservation of natural or scenic beauty, protection of property values and maintenance of economic activities dependent on marine resources.

The licensing and regulatory controls seek to prevent the discharge of such pollutants into the atmosphere or waters of the Virgin Islands by requiring sound management and operational practices, and by requiring use of appropriate equipment in the production, transfer, and transport of such products. In addition to the regulatory controls over equipment and facilities, the Act

TABLE 3.1

CHRONOLOGY OF COASTAL RELATED ACTIVITIES AND LEGISLATION

Colonial Law of 1906 (Denmark)	1906
Virgin Islands Purchased from Denmark	1916
Temporary Government Act	1917
Organic Act	1936
Most U.S. Laws Pertaining to Navigation made applicable to the V.I.	1942
Creation of V.I. Planning Board	1950
Revised Organic Act	1954
Zoning Established in the V.I.	1963
Elective Governor Act	1968
Islands Selected Resources Report	1968
Water Pollution Control Act	1968
Department of Conservation and Cultural Affairs	1968
Tektite I and Tektite II	1969
"Year of Ocean Development" Proclaimed	1970
V.I. and the Sea Report	1970
Virgin Islands Planning Office Established	1970
Open Shoreline Act	1971
Earth Change Law	1971
Revised Zoning Law	1972
Shoreline Alteration and Dredge Control Law	1973
U.S. Government Transfers Submerged Land To Government of the Virgin Islands	1974
Oil Spill Prevention and Pollution Control Act	1974
Planning Office Initiates Development of Coastal Zone Management Program	1974
Trustland Alteration and Occupancy Control Act	1975
Bolongo Bay Litigation	1976

established oil spill and pollution containment plans to control the effects of discharges of pollutants and to expedite their cleanup and removal. The Act established a coastal protection fund to finance cleanup operations.

RELATED PLANNING ACTIVITIES

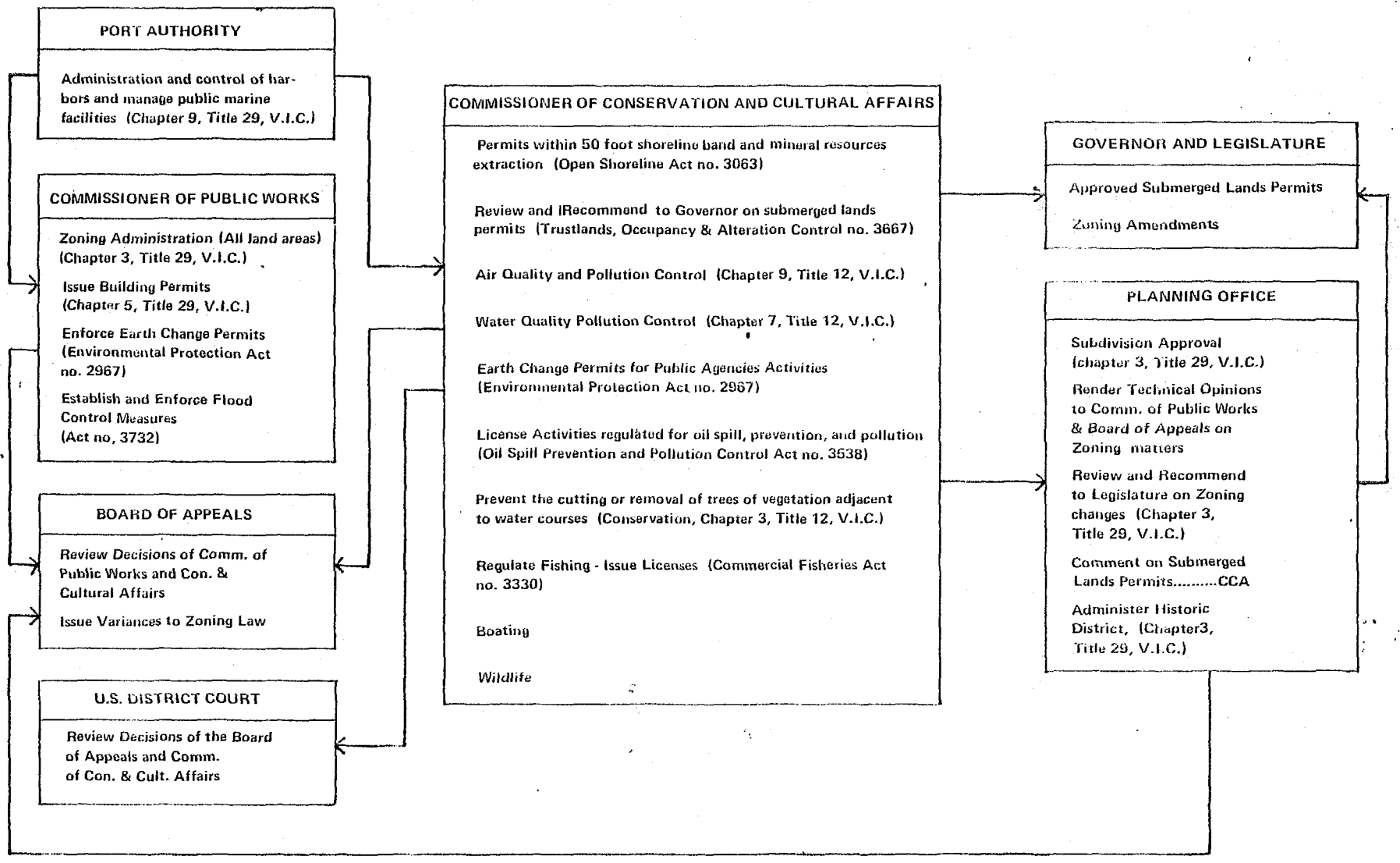
Efforts by the Planning Office to provide a comprehensive land use plan for the islands. have continued. In July, 1974, this agency began to prepare a comprehensive land use plan for the territory under a 701 Comprehensive Planning Assistance Grant from the U. S. Department of Housing and Urban Development. This land use plan is to be completed by August, 1977 and will incorporate the elements of the approved coastal zone management program. As of December 1, 1974, the Virgin Islands Planning Office has been engaged in the development of a CZMP pursuant to Section 305 of the CZMA of 1972.

The history of coastal and coastal-related activities and legislation is extensive, as it should be for an area so inextricably bound to the sea. An adequate body of legislative authority presently exists to implement a management plan for the Virgin Islands. The major thrust of the plan development has been to streamline, consolidate and reorganize as much as possible the existing authorities to create an effective implementation tool. The development of a land and water use plan has been emphasized so that existing and amended authorities might be conducted under the aegis of a rational, explicit, and substantive management program.

GOVERNMENT OF THE VIRGIN ISLANDS

The principle territorial entities involved in coastal zone matters are the Governor, the Legislature, the Planning Office, the Department of Conservation and Cultural Affairs, the Department of Public Works, and the Board of Zoning, Subdivision, and Building Appeals. The various territorial agencies and legislative Acts which comprise the existing regulatory system for coastal-related land and water activities are illustrated in Figure 3.6. The basic responsibilities of these entities are outlined below.

FIGURE 3.6
EXISTING REGULATORY SYSTEM FOR LAND AND WATER ACTIVITIES



Virgin Islands Planning Office (VIPO)

VIPO has the responsibility for reviewing amendments to the Zoning Law, approving land subdivision, and reviewing building proposals in Historic and Architectural Control Districts. It also reviews and makes recommendations to the Commissioner of Conservation and Cultural Affairs for all shorelands and water use permits. In addition, the Planning Office comments on all requests to the Federal government for funding permits, or licenses through the A-95 Review process. The Office also prepares comprehensive long range development plans, annual economic reports, capital improvement programs, and water resources plans.

Department of Public Works (DPW)

DPW administers and enforces the Building Code, Zoning Law, and the Earth Change Law. It also reviews and makes recommendations for all shorelands and water use permits; administers Federally assisted programs pertaining to public buildings, highways and utilities; constructs and maintains public facilities; provides solid waste disposal services; and establishes and enforces flood control measures.

Department of Conservation and Cultural Affairs (DCCA)

DCCA administers and enforces all laws pertaining to fish and wildlife, regulation and licensing of motor boats, removal of trees and vegetation adjacent to water courses, air pollution and water pollution. It is responsible for all public projects under the Earth Change, Submerged Lands, Open Shorelines and Oil Spill Prevention Laws. It also operates and maintains parks, beaches, and recreational areas and facilities.

Board of Zoning, Subdivision, and Building Appeals

The Board hears and decides upon appeals by citizens or the Commissioner of Public Works under the Zoning Law, Building Code, and Subdivision Law and has the authority to grant variances.

V. I. Port Authority

The Port Authority is responsible for the development and management of all public marine facilities including docks, piers, wharves, bulkheads, and terminals. It administers and controls the harbors of the territory and, in so doing, it may prescribe rules and regulations.

Representative to Congress

In 1968, the Virgin Islands Legislature enacted legislation to provide for a Washington Representative. This delegate represented the people of the Virgin Islands on a full-time basis before the Congress of the United States and before the various departments and agencies of the Federal government on all matters pertaining to the Virgin Islands, In 1972, Congress provided for a non-voting Virgin Islands Delegate to the United States House of Representatives to be elected by the people of the Virgin Islands.

Governor and Legislature

The Governor and Legislature act on all admendments to the Official Zoning Maps and Zoning Laws and approve Submerged Lands Permits for all projects sponsored by the private or public sector. They adopt rules and regulations promulgated by government agencies for the implementation of territorial laws. The Governor, as the chief executive officer of the Government of the Virgin Islands, is responsible for the supervision and control of all operational departments, agencies, and other instrumentalities under his office,

JURISDICTION OF THE FEDERAL GOVERNMENT IN THE TERRITORY'S COASTAL ZONE

Although the Virgin Islands Government has management and regulatory control over land and water areas within the coastal zone boundary, the U. S. Government, through several Federal statutes, has regulatory authority over navigable waters and inland water areas in the territory. The following Federal statutes are applicable in the territory and significantly affect activities in the coastal zone:

(1) Section 10 of the Rivers and Harbors Act (30 Stat. 1151, 33 U.S.C. 403) prohibits the unauthorized obstruction or alteration of any navigable waters of the U. S. This applies to erection of structures, dredge and fill material, and other activities in the navigable waters. A permit program is administered by the U. S. Army Corps of Engineers.

(2) Section 404 of the Federal Water Pollution Control Act Amendments of 1972 (86 Stat. 816, U.S.C. 1344) prohibits the discharge of dredged or fill materials into primary tributaries, lakes and fresh water wetlands

contiguous and adjacent thereto. Under this provision, the U.S. Army Corps of Engineers is responsible for regulating discharges in all waters including inland waters such as ponds and wetlands. It must approve the transport of dredged materials for the purpose of dumping into ocean water under Section 103 of the Marine, Protection, Research and Sanctuaries Act of 1972.

(3) Section 401 of the Federal Water Pollution Control Amendments of 1972 requires certification from the territory's Department of Conservation and Cultural Affairs for discharge of any kind into the navigable waters. These discharges must be consistent with applicable effluent limitations and water quality standards.

(4) The National Flood Insurance Program was established under the Flood Disaster Protection Act and the National Flood Insurance Act to make flood insurance available to property owners in flood-prone areas and to require that appropriate measures be applied in the management of flood-prone areas.

(5) The National Historic Preservation Act of 1966 requires the Advisory Council on Historic Preservation to review and comment on all Federally licensed projects affecting a National Register property.

(6) U. S. Fish and Wildlife Service reviews and comments on all Federally sponsored, authorized, or permitted or licensed works which alter aquatic ecosystems under the Fish and Wildlife Coordination Act.

(7) The U. S. Department of the Interior administers the oil, gas, and mineral resources reserved by Congress in the transfer of the submerged and filled lands to the territorial Government. The exploration or development of these resources requires permission from this department under a permit lease agreement.

(8) The Fishery Conservation and Management Act of 1976 has applied in the territory of the Virgin Islands since March 1, 1977. The Federal Government will control fishing within 200 nautical miles of the territory.

(9) The U. S. Coast Guard is responsible among other things for:
(a) boating safety and law enforcement on the navigable waters, including the rules of the road and anchorage regulations, and Federal laws on those waters subject to the jurisdiction of the

U.S.; (b) enforcing regulations relating to the safeguarding of vessels, harbors, ports and waterfront facilities; (c) issuing and enforcing regulations relative to procedures, methods and equipment for preventing discharges of oil; (d) and determining the responsibility for an oil spill and what actions are necessary for its containment and clean-up. In addition, three functions require a permit and bear mentioning. The U. S. Coast Guard issues permits for: (a) regulating the establishment of private aids to navigation; (b) the establishment of bridges and causeways over navigable waters; and (c) the processing of applications for deepwater ports.

(10) The U. S. Fish and Wildlife Service (Department of the Interior) and the National Marine Fisheries Service (U. S. Department of Commerce), under the Endangered Species Act of 1973, develop and enforce regulations, land acquisitions, cooperative agreements and management assistance to states having such agreements. The U. S. Fish and Wildlife Service among other statutes and laws works through the National Environmental Policy Act of 1969, Marine Protection, Research and Sanctuaries Act of 1972, Migratory Bird Act, and Executive Order No. 11990 (protection of wetlands) and Executive Order No. 11988 (floodplain management.

CHAPTER FOUR

Problems and Issues to be Addressed by the Coastal Zone Management Program

The purpose of this chapter is to outline the specific coastal problems, conflicts, and issues which have been identified by the Virgin Islands CZMP. Subsequent chapters will detail the proposed management program designed to remedy these problems.

The Economic Boom of the 1960's and Need for Planning

Despite the lure of its coastal resources, the Virgin Islands remained relatively undeveloped until the late 1950's, at which time it was "discovered" by residents of the U.S. mainland. Population and construction activity grew rapidly in the 1960's as a result of a large number of visitors to the islands. In the span of a decade, from 1960 to 1970, total population more than doubled from 32,000 to 75,000. Hotels, condominium apartments, and second homes began to locate along ridgelines and adjacent to beaches and other waterfront areas. A large number of public housing projects, as well as commercial and industrial developmental activities, were established throughout the islands.

While growth has been beneficial in many ways (most notably providing employment and a higher standard of living), there have been concomitant environmental, social and economic problems. Given the pace of development during the 1960's, it is hardly surprising that much of this activity was haphazard and unplanned. Unfortunately, the implications of poor development practices are highly magnified in a small island system. For example, loss of natural areas such as mangrove systems, salt ponds, reefs, and marine grass beds has resulted in a decline in both marine productivity and wildlife habitat. Development has often degraded amenity resources, threatened traditional public rights to use water and shoreline areas, and encouraged relatively uncontrolled use of the shorelands. In recent years, many of these problems have been recognized and some legislative remedies have been enacted. Despite such attention, however, the Virgin Islands Government has been only partially able to deal with development induced problems.

Important social changes have occurred also. Until 1940, Virgin Islanders comprised 75-80 percent of the total population. Since 1940, this native hegemony has steadily decreased and by 1970, native islanders made up less than half of the total population. This change in ethnic composition is a direct result of the large-scale economic growth. The large influx of British West Indian, Puerto Rican, and continental American immigrants has dramatically altered the traditional Virgin Islands culture. As a result, racial and ethnic tensions exist between some groups, and many natives feel that they are "losing out" and "losing control" to these newcomers. In conclusion, it should be emphasized that socio-cultural changes, as well as environmental changes, are implicit in economic development and underline the need for comprehensive planning.

Specific Problems and Issues

Rapid unplanned growth has led to a number of specific issues and problems that have served as an impetus to the development of a coastal management program. Many of these problems relate to water quality and land and water use conflicts. Additionally, the issues of shoreline allocation and access, and administration and enforcement of regulations are addressed.

WATER QUALITY

The quality of most coastal waters is still relatively high, and some areas improved in recent years. Others are still polluted or showing signs of deterioration. The quality of the surrounding waters is affected mainly by sediment runoff, dredging and filling activities, discharge of sewage effluents, and disposal of solid waste materials.

SEDIMENT RUNOFF

The problem of excessive sediment runoff is caused primarily by increased urbanization of previously undeveloped lands. Construction activities disturb the soil by stripping vegetation and altering natural landforms. Alterations to the existing land cover, such as housing developments and paving, increase runoff and the flow of sediments, thereby contributing turbidity in coastal waters. The effects of sediment runoff are particularly acute and noticeable in the bays and harbors adjacent to developed watersheds immediately following a heavy rainfall. Large plumes of silt extend from the mouths of drainage guts into the adjacent waters. The sedimentation effects are harmful to the marine environment, aesthetically objectionable, and increase the necessity for maintenance dredging.

DREDGING AND FILLING ACTIVITIES

Dredging of sand and other materials to create artificial landfill, marina sites, improve navigation and provide construction aggregate, has occurred in nearshore areas on a large scale and altered and destroyed natural cycles and ecosystems, such as mangrove areas, saltponds and beaches.

Nearshore dredging activities increase turbidity which disrupts natural marine ecological systems and creates potential beach erosion problems. The alteration and destruction of wetlands and ponds affect fish and wildlife productivity and the drainage and flushing of storm and flood waters on adjacent beaches.

The most notable activities of this type are: the filling and dredging of Krause Lagoon, St. Croix, and Mosquito (Lindberg) Bay, St. Thomas, the piecemeal construction activities at the Mangrove Lagoon, St. Thomas, the stripping of sand on the East End of St. Croix, dredging in Christiansted Harbor, and the alteration of the Mandahl Saltpond, St. Thomas.

Both sediment runoff and dredge and fill activities have resulted in temporarily increased water turbidity. Heavy sedimentation has damaged both reef and fish-life, and is also unappealing for swimming or snorkeling. Turbid or cloudy waters limit light needed for flood production by marine plants.

DISCHARGE OF SEWAGE EFFLUENTS

The discharge of raw sewage and toxic substances from boats and marine operations as well as from sewage treatment plants contributes significantly to changes in water quality. In many instances, liquid waste is disposed of in pristine waters or in waters with the least capacity to tolerate further stresses. Even minimal degradation of water quality can have severe adverse impacts upon certain fragile nearshore ecosystems.

SOLID WASTE DISPOSAL

Careless solid waste disposal practices affect water quality, litter the shoreline and bottom of the sea, and in the instance of abandoned vessels, obstruct navigation. The primary sources are marine land-fills eroded by ocean currents. Offshore dumping by boats and cruise ships is also a contributing factor.

USE CONFLICTS

Increased economic activities and the accompanying large scale urban growth have created unprecedented pressure on the resources of the islands' coastline. Shoreline areas are highly desirable for development for a number of reasons. As a result, residential, commercial, industrial, recreational, public and institutional uses compete for severely limited space.

The most significant problems include: the loss of important natural areas, visual conflict, inappropriate shoreline zoning, lack of general land and water use plan, development in hazard prone areas, and constraints on public beach access.

LOSS OF NATURAL AREAS

Unfortunately, areas that are frequently attractive for the location of economic activities, are ecologically fragile and extremely vulnerable to development of any kind. The loss of natural areas is frequently the result of dredge and fill operations. Ecologically valuable reefs have been blasted and mangroves, saltponds, and beaches have been filled or dredged to accommodate industrial, resort or marina development. In other instances, the functioning of these vital areas has been impaired by encroaching development. These losses are irrevocable and have contributed to declining marine productivity, as well as other coastal resource related problems.

VISUAL CONFLICT

One of the most important resources of the Virgin Islands is its high degree of visual quality. The islands are beautiful, and their beauty satisfies residents and tourists alike. A problem which results from the competition for shoreline space is visual conflict from haphazard development. Piecemeal destruction of coastal resources, and the type of construction, and location of facilities along the shoreline is becoming a major aesthetic concern. Frequently, adjacent uses conflict drastically in character, as well as the quality of design, construction and maintenance. No single incongruity is so serious, but cumulatively even small projects deface the landscape.

INAPPROPRIATE SHORELINE ZONING

Current zoning for many shoreline areas, particularly those surrounding prime beaches, reflects excessively high expectations regarding property use. Extensive construction of hotels, condominiums, and even private residences, has often created water quality, visual and public access problems. Many important recreational and natural resources, such as Magens Bay or Mandahl on St. Thomas, and Sandy Point or Great Saltpond on St. Croix, are currently zoned for high intensity use. If these areas are to be protected, existing zoning should be re-evaluated.

LACK OF A COASTAL LAND AND WATER USE PLAN AND DEVELOPMENT POLICIES

Loss of natural areas, development of hazard areas, visual conflict, and constraints on public access are all related to the lack of a coastal land and water use plan and development policies. The development of a comprehensive and enforceable program for the coastal zone is essential not only to the maintenance of environmental quality, but also to present and future economic productivity.

Space for Water Dependent Uses:

Much of the limited amount of land suitable for intense development is located along the shoreline. Shoreline areas are also generally the most attractive and convenient location for many types of development.

As a result, uses which must be located on the shore to function face competition from non-water oriented uses. This precludes use of the area for legitimate water dependent uses, and reduces options for their siting.

Displacement of Non-Coastal Dependent Activities:

Scarce and expensive coastal real estate has encouraged many types of non-coastal dependent development to move inland and upland. While this does alleviate coastal development pressures, it has several negative impacts: a) the necessity for expensive extensions of public facilities and services; b) urban sprawl with a resultant loss of agricultural land and open space, as well as the blurring of town and country; c) increased travel and with it traffic congestion, air pollution and energy consumption.

This trend will undoubtedly be accelerated by shoreline restrictions. A plan for future coastal land and water use can not ignore the inland development pressures and associated impacts which will be created by coastal regulations. Mechanisms for encouraging new development to cluster in and around existing infrastructure must be considered.

Development in Hazard Areas:

Although no major hurricane has struck since 1932, the Virgin Islands lie in a "hurricane belt." That hurricane and others previously have had disasterous consequences. Buildings were destroyed and sections of the developed areas inundated by flood waters. Hurricanes in Paradise, a historical as well as predictive report on hurricanes in the Virgin Islands, indicates there is a considerable likelihood of another major storm before the year 2000. All low-lying coastal areas are flood-prone, and particularly those at the mouths of guts, or

drainage ways. The fill activities of the past twenty years have considerably increased the amount of low-lying coastal areas subject to flooding.

The situation has been exacerbated by the increased development upland and subsequent intensification of runoff from the watersheds. Commercial and residential development has been sited on those filled lands, thereby increasing the amount of high intensity areas threatened by the consequences of dual flooding from runoff and tidal surge. Potential damages and economic losses related to development in these areas include: loss of life, replacement and rehabilitation costs, higher insurance premiums, and the costs of protective works.

Short Term vs. Long Term Productivity

Past experience has demonstrated that a market allocation of coastal resources will likely result in short-term economic benefits being favored over long-term economic productivity. While major projects may have a direct and readily identifiable adverse impact upon the coastal zone, the negative impacts of most proposed activities will be far less severe. Any single project, viewed in isolation, will likely yield benefits in terms of income and employment with only minor environmental losses.

The gradual, piecemeal loss of resources has not usually been recognized as an economic loss; however, these relatively small, incremental impacts pose a serious problem in terms of economic productivity. For example, a single waste discharge in the coastal zone waters may have little, if any, adverse impact upon those waters. Several discharges, over time, may result in the loss of those waters as a recreation resource because of odor, turbidity, or disease potential. Increased storm runoff may not be attributable to any single activity; however, the cumulative effects of upland development may result in increased flooding problems. These kinds of environmental degradation must be viewed as economic losses as well. While such losses may often be mitigated through corrective action, in some instances, the loss is permanent.

Shoreline Access

Intensive commercial and residential development along the shorelines, particularly beaches, has restricted public use. Although for the most part property owners no longer charge entrance fees, many are not required to provide access. Even where public access is available, the aura that surrounds resort development often presents an effective psychological barrier.

The problem is compounded by the loss of swimming beaches and recreational areas where one could enjoy the coastal environment near, or adjacent to the urban population centers of

Christiansted and Charlotte Amalie. Buck Hole, Bay Side, Long Bay, Barracks Yard, Boat House and Gregory Channel once provided Charlotte Amalie residents with easy access to the water, but filling, construction, and poor water quality obliterated most, and precluded the use of the few remaining areas.

By restricting the use of privately owned beaches, and the loss of urban beaches and swimming areas, residents who generally live within close proximity to the water frequently travel some distance to public beaches, with transportation a problem for many, particularly the young and lower income groups. Furthermore, a heavy demand and burden is placed on those public beaches by the user, resulting in beach litter and erosion, particularly on the unattended beaches.

Administration and Enforcement

This section describes some of the obstacles to effective resolution of development-induced environmental problems. Previous attempts to resolve environmental problems have involved the establishment of separate programs under different agencies with an overwhelming array of requirements. The Open Shorelines Act, The Earth Change Law, Trustlands Occupancy and Alteration Control Act are acts pertaining to the coastal zone, and each requires some form of permit or approval process. The Zoning Law is also applicable to coastal lands, adding to the necessity for another permit as well.

The Territory's system of permits, coupled with Federal requirements, can delay even the smallest of projects for years. Under the current situation, private sector developers are faced with uncertain public policy and unclear public guidelines for development. Inadequate administrative procedures compound uncertainties and delays, and as a result, much time and money is wasted in obtaining decisions on projects. There is a definite need to streamline the process and to consolidate agency responsibilities. Enforcement problems are further compounded by insufficient personnel. Agencies have all too often been entrusted with environmental responsibilities, but with no additional funds to carry them out.

A jurisdictional dispute presently exists between the Department of Conservation and Cultural Affairs and the Virgin Islands Port Authority over control of portions of filled lands. Upon its creation, the Port Authority was vested with administrative responsibility over all coastal lands used for port and related purposes. With the transfer of the submerged and filled lands from the Federal government to the Virgin Islands, and subsequent enactment of the Trustlands, Occupancy and Alteration Control Act and the applicability of the Open Shorelines Act to these areas, the Department of Conservation and Cultural Affairs was made responsible for the management and use of all filled, reclaimed or submerged lands. The Port Authority contends that its properties are exempt from those provisions while the Department of Conservation and Cultural Affairs maintains they are not.

Finally, the Zoning Law in its present form is not particularly effective for implementing a CZMP. While there are some seventeen districts (including two waterfront districts), the Law does not establish any special regulations that address the peculiar environmental or developmental needs of coastal areas.

3

THE MANAGEMENT PROGRAM

CHAPTER FIVE

Development of a Coastal Land and Water Plan

This chapter presents the coastal land and water use plan. The first section is a delineation of the geographic extent of the coastal zone. The criteria for delineating the boundary and its units are discussed. Coastal goals and policies comprise the second section. These goals and policy statements were derived from several sources, and used as guides in the development of the management program.

A discussion of the Permissible Land and Water Use element follows in section three. This element includes a definition of direct and significant impact, a listing of uses subject to the provisions of the management program, and use priority ratings for the various activities. There is also a series of guidelines concerning uses and activities for each coastal environment.

The last section is a coastal land and water use plan for the coastal areas. It is essentially a graphic representation of the coastal policies and priority of use designations, and site specific guidelines which were developed as part of the management program.

Boundary Definition

The Coastal Zone Management Act requires that the management program include an "identification of the boundaries of the coastal zone subject to the management program." The Act proceeds to define "coastal zone" and "coastal waters". The coastal zone boundary delimits the extent of geographic area to be managed by the Virgin Islands CZM program.

> Coastal zone means the coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines. . . . and includes islands, transitional and intertidal areas, salt marshes, wetlands and beaches. The zone extends . . . seaward to the outer limits of the United States territorial sea. The zone extends inland from the shorelines only to the extent necessary to control shorelands the uses of which have a direct and significant impact on the coastal waters. Excluded from the coastal zone are lands, the use of which is by law subject solely to the discretion of or which is held in trust by the Federal Government, its officers or agents (Section 304 (a)).
>
> Coastal waters means . . . those waters, adjacent to the shorelines, which contain a measurable quanity or percentage of sea water, including, but not limited to, sounds, bays, lagoons, bayous, ponds, and estuaries (Section 304 (b)).

The applicable regulations (15CFR 923.11 (b) (1)) indicate that the coastal zone must include "lands which have a direct and significant impact upon the coastal waters and over which the terms of the management program will be exercised."

On the three main islands, no location is further than five miles from the shoreline, and this relatively small size means that all areas have the potential to impact coastal waters. The considerable amount of lands with steep slope, the large numbers of guts draining inland watersheds into coastal waters, and the associated problems or erosion, siltation, and sedimentation all serve to make the islands a unified coastal zone. The offshore islands and cays bear an even more direct relation to the coastal waters as the largest, Hans Lollick, is less than 500 acres. Accordingly, the entire Virgin Islands (the main islands and the offshore islands and cays) are considered to be within the coastal zone boundary.

At the same time, certain portions of the islands have a much stronger relationship to the coastal waters than others. These are areas adjacent to the coastal waters where a delicate land/water interface exists, and where special attention must be directed to maintain the integrity of critical and complex natural processes. Recognizing the need for a different treatment of this coastal fringe and the upland areas, an inland coastal zone boundary has been delineated for the Virgin Islands utilizing a two tier approach (See Coastal Land and Water Use Map).

The first tier is composed of a relatively narrow strip along the coast and subject to regulation via the provisions of a coastal zone permit system (See Chapter Eight, Mechanisms for Implementation). All offshore islands and cays are included in the first tier, except those areas under the "sole discretion" of the Federal government: Water and Buck Island, St. Thomas; Trunk Cay, St. John; Buck Island, St. Croix.

The second tier of the boundary includes all watersheds and adjacent areas and consists of the remaining interior portions of the three main islands. A coastal zone permit is not necessitated within the second tier. Therefore, enforcement of the management provisions rests with existing authorities primarily under the Earth Change Law. The general goals of the Program apply to this area as well.

CRITERIA FOR INCLUSION INTO THE FIRST TIER BOUNDARY

The landward extent of the first tier has been drawn to meet several criteria:

1. It must be sufficient to encompass uses along the shoreline which will directly and significantly affect coastal waters.
2. It must include areas designated as being of particular concern.
3. It must include transitional and intertidal areas, salt marshes, wetlands, and beaches. Mangrove areas and salt ponds/tidal flats can be classified as wetlands and intertidal areas and are environments which are critical to the resources of coastal waters. They also function as natural systems that intervene and serve to mitigate consequences of various land based uses. Because of these considerations, all of these areas have been included. Furthermore, the boundary should be drawn in such manner that their integrity and function are assured.
4. The boundary must include all of the submerged and filled lands whose jurisdiction has been transferred to the Virgin Islands Government, and administered by the Department of Conservation and Cultural Affairs under the Trustlands, Occupancy and Shoreline Alteration Act.
5. Because one intent of the CZMA is to prevent undue disruption to natural coastal ecosystems, the urbanized areas of Christiansted, Frederiksted and Charlotte Amalie, where these systems and shorelines have been extremely modified and altered, are included only to the limit of the first roadway or property line, or the extent of filled lands under jurisdiction of Conservation and Cultural Affairs.
6. The boundary shall include those coastal areas subject to tidal and gut flooding. The first tier boundary must be readily comprehensible to property owners, Virgin Islands and Federal government agencies, and the public in general, and it must be administrable. Therefore, the boundary has been delineated along cultural and administrative features in accordance with approximate biophysical criteria. Suitable features are roadways, landmarks, property lines, U.S.G.S. contour lines, and uniform distances from the mean low tide mark.

EXTENT OF THE SEAWARD BOUNDARY

The seaward extent of the coastal zone is the limit of the territorial sea or a distance of three nautical miles from the offshore islands and cays, or the international boundary.

ST. CROIX BOUNDARY

West End:

Included is the coastal plain or 1000 foot inland from Ham's Bay to Frederiksted where the boundary is a coastal roadway to Smithfield, following the proposed cross-island highway. At Concordia it resumes the 1000 foot width.

South Side:

The boundary consists of a 1000 foot width along south shore side to Manning Bay racetrack; following the public roadway passing north of Martin Marietta and Hess properties, south to Estate Cane Garden where the 1000 foot width is resumed to Great Salt Pond. The boundary is a 500 foot band around the pond, continuing east along the south shore road.

East End:

The boundary follows the ridge line connecting the south shore road with the East End Road.

North Side:

West along the East End Road to the road along Altona Lagoon, the boundary follows the road to Christiansted where the boundary becomes the first property line adjacent to the shoreline. It then proceeds along waterfront road to the ruins at Golden Rock and along the coastal road northwest to Judith's Fancy and the Salt River area where the boundary is drawn along a series of ridgelines and roadways. From Kirkegaard Hill to the Ham's Bluff area, the boundary continues to follow the roadway and ridgeline of the coastal hills.

ST. THOMAS BOUNDARY

West End:

Starting from the Botany Bay area proceeding southwest, the boundary follows the 200 foot contour line until the first set of coastal hills where it runs along the first set of ridges at Barents Bay and follows a combination of coastal ridges and 200 foot contour lines to the Fortuna Bay area. From there it proceeds along the 440 foot contour. At the juncture of the 200 foot contour and the West End road, the boundary proceeds along that road southeast through

Estate Bonne Esperance past the College and the Harry S. Truman Airport to the Sub Base area.

South Side:

Following the road system, the boundary proceeds along the Waterfront Drive and continues east along the Waterfront Drive or the inland limit of formerly filled land (whichever is greater) to Long Bay Road. It continues along Long Bay Road through the Havensight area. In Bakeroe, Frenchman's Bay, and Bolongo area, the boundary is a composite of ridge lines and contours approximating the 200 foot contour line.

East End:

In the East, the first tier boundary is coterminous with the Bovoni Road to the intersection with Turpentine Run. From that juncture the boundary follows a series of ridge lines to Estate Nazareth and joins the Nazareth Bay/Smith Bay Road at Vessup Bay. From there, the boundary is coterminous with the Smith Bay Road to Mount Pleasant where it follows the ridge line. From that point, the boundary again proceeds along the Smith Bay Road. Starting in Frydendal the boundary is a series of first ridge lines continuing along the north east.

North Side:

A series of contours and ridge lines comprises the boundary. This series approximates either the 200 or 400 foot contours to Lovenlund Bay and the Peterborg Peninsula; all of which is included. The boundary then proceeds southwest following the Magens Bay Road to Drake's Seat. The boundary continues along the Louisenhoj Road to Misgunst, where it assumes approximately the 200 foot contour to Botany Bay.

ST. JOHN BOUNDARY

A large part of St. John (approximagely 50 percent) lies within the Virgin Islands National Park and is therefore excluded from the management area. For the most part, the first tier boundary is drawn along a series of contours, roadways and the boundaries of inholdings (those properties within the confines of the park and slated for acquisition but which have not been purchased).

Cruz Bay to Fish Bay Area:

From Cruz Bay to Fish Bay the boundary has been drawn along a combination of property lines, roads, and the 200 foot contour.

Coral Bay Area:

Starting at Concordia, Drunk Bay, to Coral Harbor the boundary is coterminous with the National Park boundary. The entire East End from Haulover is included.

Cinnamon Bay - Caneel Bay Areas:

At the Cinnamon and Caneel Bay areas the boundary includes all of the "inholdings".

EXCLUDED FEDERAL LANDS

The boundary of the coastal zone, by law, must exclude "lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal government, its officers or agents" (Section 304 (a), CZMA and 15CFR 923.11 (4)). The guidelines require that management plans identify Federal lands over which the states do not exercise jurisdiction as to use.

There has been considerable controversy surrounding the definition of "sole discretion", and provisions of the Act. A ruling from the U.S. Attorney General was requested by the Office of Coastal Zone Management-NOAA to clarify this issue. The opinion of August 10, 1976 states, "if full power to control the use of lands of the United States resides in Congress, such power must also be the sole power, for power is not full if subject to the actions of another. Thus, the plain language of the Federal lands exclusion makes it clear that all Federal lands are excluded from the coastal zone" (emphasis added). Accordingly, all Federal areas owned, leased, held in trust, or whose use is otherwise by law subject solely to the discretion of the Federal government within the Virgin Islands are excluded from the coastal zone boundary. Pursuant to Section 307 (c) (1) and (2), activities which "directly affect the coastal zone are subject to the so called "consistency provisions". A list of excluded Federal land is found in Appendix B, Virgin Islands Federal Interaction and the National Interest. Excluded Federal lands are delineated on the Coastal Land and Water Use Map.

Program Goals and Coastal Polices

Goals and policies regarding the coastal zone have been derived from two sources: those policies previously endorsed by the Government of the Virgin Islands in various legislative acts, and those resulting from the findings of the Study Procedures as detailed in Chapter Two. Many of the CZM policies are a reiteration of policies, goals, and objectives articulated in existing Virgin Islands legislation. The CZM program has analyzed these coastal related policies, developed additional policies based on the technical findings, and synthesized the two.

The goals and policies also reflect the national policies outlined in the Coastal Zone Management Act (Sections 302 and 303). These goals and policy statements have been used as a framework for guiding the development of all aspects of the Virgin Islands Coastal Zone Management Program.

EXISTING RELEVANT VIRGIN ISLANDS POLICIES

Policy statements concerning the importance of coastal resources and the necessity for their wise management are found in the major legislative acts pertaining to the coastal environment. Policies reflecting the need for economic growth and industrial development are also articulated in a number of Territorial laws. The following legislative policies have served as a basis for program development.

In the Open Shoreline Act (Act No. 3063, Title 12, Chapter 13, V.I.C.), the Legislature recognized the historical importance of the shorelines and sea to all Virgin Islanders and also recognized the infringement of development upon traditional uses, particularly the right to the uninterrupted and unobstructed use of the shorelines.

Concerning the use of the shorelines and coastal waters, it is legislative policy to "preserve what has been a tradition and to protect what has become a right of the public". This policy is further substantiated by the inclusion in the Industrial Development Law (Title 29, Chapter 12, V.I.C.) of a stipulation that, as a requirement for tax exemption, each business with a coastal site "grant to the Government of the Virgin Islands a perpetual easement upon and across such land to the beach or shoreline to provide for an unrestricted access thereto to the public".

Governmental policies toward the submerged lands are articulated in the Trustlands, Occupancy and Alteration Control Act (Act No. 3667, Title 12, Chapter 15, V.I.C.). Here the

Legislature finds submerged and filled lands to be vital natural resources that are held in trust for the "benefit of the people of the Virgin Islands. Therefore, it is encumbent upon the Government of the Virgin Islands to preserve, protect, maintain, and improve the natural resources of the Virgin Islands, and to protect the public interest, by controlling the occupancy and alteration of trustlands".

The coastal waters have received legislative attention as well. The Oil Spill Prevention and Pollution Control Act (Act No. 3538, Title 17, Chapter 12, V.I.C.) states that:

1. "The highest and best use of the waters and shorelines of this Territory is a source of public and private recreation."

2. "The preservation of this is a matter of the highest urgency and priority, and that such use can only be served effectively by maintaining the coastal waters, estuaries, beaches and shorelines in as close to a pristine condition as possible, taking into account multiple use accommodations necessary to provide the broadest possible promotion of public and private benefits."

3. "The preservation of the public uses referred to herein is of grave public interest and concern to the Territory in promoting its general welfare. . ."

The strong interrelationship between coastal areas and inland sections has been recognized in the Earth Change Law (Act no. 2967, Title 12, Chapter 13, V.I.C.). The findings determined that the lands and waters comprising the watersheds of the Virgin Islands are "great natural assets and resources," and that improper development has adversely degraded the environment to the extent that it is now a policy to prevent soil erosion, and conserve beaches, shorelines, and the coastal zone of the Virgin Islands.

While governmental policies state that the highest and best use of the coastal waters and shores is recreation, and that preservation and conservation of the coastal areas and natural resources are a public concern, the need for economic growth and development has also been recognized. The purpose of the Industrial Development Law (Title 29, Chapter 12, V.I.C.) is the "promotion of the growth, development, and diversification of the economy of the Virgin Islands by discovering and developing to the fullest possible extent the human and economic resources available therein". To this end, it is a policy to promote "the growth, development and diversification of the economy of the Virgin Islands, . . . and the capital formation for the industrial development of the Virgin Islands".

In addition to industrial development, this legislation calls for "preservation of the environment, beauty and natural resources of the Virgin Islands;" all of whose purposes and objectives are declared to be in the public interest. The position is further substantiated by the specific requirement that industries meet "standards of ecological compatibility" by requiring adherence to Federal and/or Territorial environmental standards. While the Legislature has articulated concern for the quality of the coastal environment in laws relating

specifically to the environmental and aesthetic resources, the inclusion of these values in legislation dealing with industrial development is highly significant.

Thus, based upon an analysis of recent coastal related legislation, it is evident that existing governmental policies reflect the need for environmental protection measures as well as economic growth. In addition, it is clear that the legislative intent is to protect and enhance the traditional uses of the shorelines.

COASTAL GOALS

An analysis of existing governmental policies, resource capabilities, and likely future needs has led to the development of a set of goals for the CZMP. For the purposes of this report, goals are defined as abstract statements reflecting broad social values associated with the coastal zone. These coastal goals reflect the need for economic development, the conservation and preservation of significant natural resources, and the perpetuation of traditional uses.

The following goals apply to the coastal zone of the Virgin Islands and are found in the Virgin Island Coastal Zone Management Act of 1977 (Virgin Islands CZMA). (See attachment)

1. Protect, maintain, preserve, and where feasible, enhance and restore, both the overall quality of the environment in the coastal zone and the natural and man-made resources and historic resources of the coastal zone for the benefit of residents of and visitors to the Virgin Islands;
2. Preserve, protect and maintain the trustlands and other submerged and filled lands held in trust by the Government of the Virgin Islands so as to promote the general welfare of the people of the Virgin Islands;
3. Preserve what has been a tradition and protect what has become a right of the public by insuring that the public, individually and collectively, has and shall continue to have the right to use and enjoy the shorelines and by maximizing public access to and along the shoreline consistent with constitutionally protected rights of private property owners;
4. Promote and provide affordable and diverse public recreational opportunities in the coastal zone for all residents of the Virgin Islands consistent with sound resource conservation principles;
5. Assure the orderly, balanced utilization and conservation of the resources of the coastal zone as well as consideration of the social and economic needs of the people of the Virgin Islands;
6. Assure priority for coastal dependent development over other development in the coastal zone;
7. Accommodate economic development and growth in the coastal zone in a manner that protects valuable natural resources by managing the impacts of human activity so as to maintain

and enhance the long-term productivity of the coastal environment;

8. Manage the use and development of renewable resources to achieve optimum sustainable yield and of non-renewable resources in light of the public's long-term needs and interests;
9. Conserve ecologically significant resource areas for their contributions to marine productivity and value as wildlife habitats and preserve the function and integrity of reefs, marine meadow, salt ponds, mangroves and other significant natural areas;
10. Maintain or increase coastal water quality through erosion sedimentation, run-off, siltation and sewage discharge control measures;
11. Consolidate the existing regulatory controls applicable to uses of land and water in the coastal zone into a single unified process consistent with the provisions of this Act and coordinate therewith the various regulatory entities of the Unites States Government and public agencies of the Virgin Islands.

COASTAL POLICIES

To accomplish the coastal goals established above and evaluate existing and proposed programs and projects, the following set of coastal management policies have been adopted by the VICZMA of 1977. For purposes of the management program, the policies are action oriented statements that set forth the general management guidelines and procedures for realizing the goals of the program within the first tier of the coastal zone. The policies are grouped into three broad categories: those relating to development practices, those relating to the natural environment and those relating to coastal amentities.

As articulated in the VICZMA of 1977; it is **the policy of the Virgin Islands** to:

Development Policies

1. Encourage and guide new development to the maximum extent feasible into locations within, contiguous with, or in close proximity to existing developed sites or, where such sites are not able to accommodate such development, into other areas with adequate public services and where it will not have significant adverse effects, individually, or cumulatively, on coastal zone resources;
2. Assure that development will be sited and designed to protect views to and along the sea and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas. To these ends, regulations of bulk, height, set-back, minimum lot coverage and associated matters provided

in the applicable sections of the Virgin Islands Zoning and Subdivision Law may be made more restrictive by the Commissioner* as applied to particular development;

3. Assure that development is so designed as to minimize risks to life and property in areas of high geologic or flooding hazard;
4. Assure that all new subdivisions, in addition to other requirements in this chapter and requirements contained in the Virgin Islands Zoning and Subdivision Law, are physically suitable for proposed sites and are designed and improved so as to avoid causing environmental damage or problems of public health;
5. Encourage urban waterfront redevelopment and renewal in developed harbors in order to link residential neighborhoods and commercial downtown areas with physical and visual access to the waterfront;
6. Within the appropriate areas designated in the Coastal Land and Water Use Plan, give highest priority along the shoreline to water dependent uses, particularly in those areas suitable for commercial, industrial, port and marine facilities, and recreation; give secondary priority to those uses that are water related or have special siting needs; and do not permit uses which are neither water dependent or related nor have special siting needs in areas suitable for industrial, commercial, and marine facility development;
7. Encourage fishing, and carefully monitored mariculture and the controlled cultivation of the seafood harvest and, to the extent feasible, protect local fishing activities from encroachment;
8. Prohibit further dredging or filling of submerged lands unless such dredging or filling is clearly in the public interest; and promote the widest possible public benefit from port and harbor and channel dredging and ensure that such proposals are consistent with specific marine environment policies. To these ends, the diking, filling or dredging of coastal waters, salt ponds, lagoons, marshes or estuaries shall be permitted, in accordance with other applicable provisions of this Chapter, only where there are no feasibly less environmentally damaging alternatives, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (i) maintenance dredging required for existing navigational channels, vessel berthing and mooring areas, incidental public service purposes, including, but not limited to burying of cables and pipes or inspection of piers and maintenance of existing intake and outfall lines; (ii) new or expanded port, oil, gas and water transportation, and coastal dependent industrial uses, including commercial fishing

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* Commissioner of the Department of Conservation and Cultural Affairs

facilities, cruise ships facilities, and boating facilities and marinas; (iii) mineral extraction, including sand, except in significant natural areas; (iv) restoration purposes;

9. Prevent further growth and development in high hazard areas and preserve natural buffers throughout the first tier of the coastal zone;
10. Require that all development in the first tier of the coastal zone comply with all other applicable laws, rules and regulations, standards and criteria of public agencies.

Environmental Policies

1. Conserve ecologically significant natural areas for their contributions to marine productivity and value as wildlife habitats;
2. Protect complexes of marine resource systems of unique productivity and assure that activities in or adjacent to such complexes are designed and carried out to minimize adverse effects on marine productivity, habitat value, storm buffering capabilities, and water quality of the entire complex;
3. Preserve the function and integrity of reefs, marine meadows, salt ponds, mangroves and other natural systems;
4. Consider the use impacts to marine life and adjacent and related coastal environments when assessing recommendations for development within the coastal zone;
5. Assure that silting criteria, performance standards, and activity regulations are stringently enforced and upgraded to reflect advances in related technology and knowledge of adverse effects on marine productivity and public health;
6. Assure that existing water quality standards for all point source discharge activities are stringently enforced and that the standards are continually upgraded to achieve the highest possible conformance with Federally promulgated water quality criteria;
7. Preserve and protect the environments of offshore islands and cays;
8. Control construction in water bodies in minimize interference with water circulation and sediment transport to preserve water quality and marine productivity;
9. Accommodate offshore sand and gravel mining needs in areas and in ways that will not adversely affect marine resources and navigation. To this end, sand, rock, mineral, marine growth natural minerals, or other natural products of the sea, excepting fish and wildlife, shall not be taken from the shoreline without first obtaining a coastal zone permit, and no permit shall be granted unless it is established that such materials or products are not otherwise obtainable at reasonable costs and the removal of such materials

or products will not materially alter the physical characteristics of the area or adjacent areas on an immediate or long term basis, or unless the Commissioner has determined that a surplus of such materials or products exists at particularly designated locations;

10. Assure that dredging and disposal of dredged material will cause minimal adverse effects to marine and wildlife habitats and water circulation.

11. Protect environmentally sensitive habitat areas, especially those of endangered species, against significant disruption of habitat values;

12. Assure that development in areas adjacent to environmentally sensitive habitat areas, to significant natural areas and to parks and recreation areas is sited and designed to prevent impacts which would significantly degrade such areas;

13. Evaluate refinery and deepwater ports and sites to ensure that proposed facilities and sites will cause minimum harm to the coastal environment, and to ensure that facilities make use of technology that minimizes public health and safety risks. To these ends, oil and gas developments must be performed safely and consistent with geologic conditions of the well site; on-shore facilities related to such developments must not be sited where a substantial hazard to vessel traffic might result from the facility or related operations etermined in consultation with appropriate Federal agencies; and the operation and production from said developments must meet applicable water quality standards;

14. Assure all of the foregoing development must (a) be designed to assure that adverse impacts on marine productivity, habitat value, storm buffering capabilities and water quality are minimized to the maximum extent feasible; (b) be designed to assure structural integrity and neither create nor contribute significantly to erosion, geologic instability, sediment transport, land settlement or the environmental degradation of the site or surrounding areas; and (c) be designed, constructed,operated and maintained in a manner in which mitigates or avoids the significant negative environmental effects of the development to the maximum extent feasible. Said effects shall be identified in the environmental assessment form prepared for, or used in the review of, the development, or described in any other study, report, test results or comparable documents.

Amenity Policies

1. Protect, and where feasible or appropriate,enhance and increase public coastal recreational uses, areas and facilities;

2. Protect and enhance the characteristics of those coastal areas which are most valued by the public as amenities and which are scarce, which will be significantly altered in character by development, or which will cause significant environmental degradation if developed;
3. Preserve agricultural land uses in the coastal zone by encouraging maintenance of its present use, or for use as open-space areas;
4. Assure that development does not encroach upon or adversely affect the use of public recreational areas;
5. Incorporate visual concerns into the early stages of the planning and design of facilities proposed for siting in the coastal zone and to the extent feasible, expand and maintain visual access and provide views of the coastline and coastal waters;
6. Protect, foster, ensure and improve maximum access to, and recreational opportunities at, the shoreline for all the people consistent with public rights, private property owners rights and the need to protect natural resources from overuse. To assure these ends, no person shall create, erect, maintain or construct any obstruction, barrier or restraint of any nature whatsoever upon, across or within the shorelines of the Virgin Islands which would interfere with the right of the public individually or collectively, to use and enjoy any shoreline, as provided in Title 12, Chapter 10 of this Code;
7. Development shall not interfere with the public's right of access to the sea where acquired through use, legislative authorization or dedication, including without limitations, the use of beaches to the landward extent of the shoreline;
8. The Commissioner may require that public access from the nearest public roadway to the shorelines be dedicated in new development projects requiring a major coastal zone permit. Factors to be considered in requiring such public access include whether (i) it is consistent with public safety or protection of fragile coastal zone resources; (ii) adequate access exists nearby; and (iii) agricultural or other similar uses would be adversely affected. Dedicated accessways shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway. Nothing in this subsection shall restrict existing public access nor shall it excuse the performance of duties and responsibilities of public agencies as provided by law to acquire or provide public access to the shoreline.

Management of the second tier is effectively conducted through the existing Earth Change Law (Chapter 13, Section 531, Title 12 of the Virgin Islands Code and the Rules and Regulations sub-chapter 532-1 et seq.). The declaration of policy and intent of the law is consistent with the goals of the VICZMA of 1977. The law recognizes the adverse environmental consequences of of sedimentation and siltation to the coastal waters from inland and watershed erosion. All significant land alteration activities are covered by the law and subject to permit requirements. The following is the Declaration of Policy found in the Earth Change Law:

> The Legislature of the Virgin Islands hereby determines and finds that the lands and waters comprising the watersheds of the Virgin Islands are great natural assets and resources; and that improper development of land results in changes watershed conditions such as: erosion and sediment deposition on lower-lying land and in the tidal waters, increased flooding, gut and drainage filling and alteration, pollution, and other harmful environmental changes to such a degree that fish, marine life, and recreational and other private and public uses of lands and waters are being adversely affected. In order to protect the natural resources of the Virgin Islands, promote the health, safety and general welfare of the citizens of the Virgin Islands, and to protect private and public property, the Legislature further finds and determines that it is necessary to establish by law an environmental protection program for land development to prevent soil erosion and for the conservation of beaches, shorelines and the coastal zones of the Virgin Islands.

Permissible Land and Water Uses

The CZMA requires "a definition of what shall constitute permissible land and water uses within the coastal zone which have a direct and significant impact on the coastal waters" (Section 305(b)(2)); and "broad guidelines on priority of uses in particular areas, including specifically those uses of lowest priority" (Section 305(b)(5)).

This requirement has been termed "permissible uses" and contains three distinct but related elements (15 CFR 923.12(b)). The tasks required to fulfill the elements include a definition of direct and significant impact, a determination of uses subject to the management program, and an assignment of priority to the various uses (15 CFR 923(b)).

DEFINITION OF DIRECT AND SIGNIFICANT IMPACT

The first element requires the determination of uses with direct and significant impact upon coastal waters and a designation of those uses subject to the management program. This process must include:

> "A method for relating various specific land and water uses to impact upon coastal waters, including utilization of <u>an operational definition of direct and significant impact</u>" (15 CFR 923.12(a)(1)).

The CZMA delegates the role of operationally defining the concept of "direct and significant" to the states and territories. Within the context of the Virgin Islands, the following definition was developed:

Direct is an identifiable, causal relationship resulting from an action, or series of actions, through some primary link or process.
Significant is an impact whose effects enhance or degrade the quality of the environment, or curtail the range of beneficial uses of the environment, or that serve short-term, to the disadvantage of long-term CZM goals, objectives and policies and the "quality of life" in the Virgin Islands, or which are likely to be highly controversial, or those impacts which may be individually small but cumulatively large.
Impact is any modification in a characteristic of the resources of the coastal waters. These modifications include, but are not limited to, sedimentation, siltation, water quality, water circulation, aesthetics, socioeconomic patterns, littoral erosion and accretion, or other changes in the coastal waters.

USES SUBJECT TO THE MANAGEMENT PROGRAM

The Act defines uses in the broad policy terms of ecological, cultural, historic, and aesthetic values, as well as the needs for economic development (Section 303(b)). The rules and regulations indicate that a comprehensive program should consider, among others, present uses, industrial needs, energy generation, housing requirements, recreation, open space, mineral resources, communication facilities, and commercial fishing. The Planning Office has used this guidance as a basis in developing a list of uses.

The rules and regulations further stipulate that uses subject to the management program are those with direct and significant impact on the coastal waters. To determine which uses are subject to the management program, the possible consequences of each use were assessed. Those with a direct and significant impact constituted uses subject to the management program; to be controlled, restricted, or encouraged as appropriate.

The final selection of the first tier boundary reflected the need to include sufficient area to manage these uses to the extent that they directly and significantly affect coastal waters. Determinations were based upon the coastal policies and the various technical analyses of Chapter Two, particularly the resource inventories, the resource capability analysis, and staff and Advisory Committee assessments. Table 5.1 represents those uses identified as having a direct and significant impact on coastal waters and therefore subject to the provisions of the CZMP.

USE ACCEPTABILITY AND PRIORITY OF USES

The third aspect of permissible uses calls for the identification of uses which the territory deems permissible (connoting "allowable"). These uses are defined as "those which can be reasonably and safely supported by the resource, which are compatible with surrounding resource utilization and which will have a tolerable impact upon the environment" (15 CFR 923.12(b)(2)(iii)).

Section 305(a) of the CZMA requires that the management plan shall include "broad guidelines on priority of uses in particular areas, including specifically those uses of lowest priority."

TABLE 5.1

USES/ACTIVITIES SUBJECT TO MANAGEMENT PROGRAM

USES AND ACTIVITIES	COASTAL WATERS ISSUES/CHARACTERISTICS								
	bottom disturbance	water pollution (chemical and or thermal)	sedimentation	siltation	water quantity	water circulation	aesthetics	socioeconomic (usage)	littoral erosion & accretion
LAND BASED USES									
heavy industry		*	*	*	*		*	*	
high intensity		*	*	*	*		*	*	
solid waste disposal		*	*	*	*		*	*	
roads		*	*	*	*		*	*	*
low density planned subdiv. & med. density residential		*			*			*	
low density		*						*	
golf courses		*			*			*	
agriculture		*	*	*	*		*	*	*
recreation/conservation (undeveloped, open space)								*	
recreation (intensive)		*					*	*	
WATER BASED USES									
solid waste disposal	*	*	*	*	*	*	*	*	
heavy industry (off-shore facility)	*	*				*	*	*	
mining (extraction)	*		*	*		*	*	*	*
cruise & passenger & freight facilities	*	*				*	*	*	
marinas	*	*	*	*		*	*	*	
mariculture	*	*				*	*	*	
fishing						*		*	
CONSTRUCTION ACTIVITIES									
dredging	*	*	*	*	*	*	*		*
filling	*		*	*					
shore stabilization	*		*	*			*		
excavation	*		*	*			*		
site clearing	*		*	*					
pile driving	*		*	*					
blasting	*		*	*			*		
"blow-out" (boat propeller)	*		*	*			*		

* indicates a direct and significant impact on the water characteristic/issue

The regulations further elaborate, "the management program shall include broad policies or guidelines governing the relative priorities which will be accorded in particular areas to at least those permissible land and water uses . . . The priorities will be based upon an analysis of State and local needs as well as the effect of the uses on the area." Uses of lowest priority must also be specifically stated for each type of area (15 CFR 923.14).

Having defined direct and significant impact, determined the uses subject to the management program, and delineated the boundary of the coastal zone, the acceptability of these uses within that area must be determined and priorities assigned.

The approach to the use acceptability and priority of use process was designed around a classification of general coastal management units which permits the rather diverse and dissimilar coastline to be analyzed in terms of several basic types of coastal environments. This approach is premised upon the finding that certain portions of the shoreline and marine environment have similar characteristics, and therefore similar capabilities for use. Thus, based on these characteristic constraints and potentials, homogeneous coastal areas may be similarly managed. These environments are defined in terms of slope, soils, vegetative cover, erosion susceptibility, marine bottom type, and use constraints.

Eleven distinct coastal environments have been identified and were initially utilized as management units. These coastal environments are:

1. High Relief/Rocky Shores
2. Low Relief/Rocky Shores
3. Salt Pond
4. Mangrove
5. Beach
6. Sand Bottoms
7. Grass Beds/Algal Plains
8. Coral Reefs and Algal Ridges
9. Developed Bays and Shorelines (Urban, Developed, Industrial)
10. Offshore Islands and Cays
11. Open Water

Definitions of the coastal environments and a general discussion on use constraints are found in Appendix E. A more detailed discussion of the marine aspects are found in the technical supplement VICZM: Marine Resources. The Coastal Environment Map illustrates their distribution.

The coastal goals and policies were employed in conjunction with the technical findings from the study procedures to assess the "permissibility" of each generic use category, to determine use acceptability and to assign priorities. Table 5.2 illustrates the acceptability and

UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Science and Technology
Washington, D.C. 20230
(202) 377-3111

JAN 29 1979

In accordance with the provisions of Section 102(2)(C) of the National Environmental Policy Act of 1969, we are enclosing for your review and consideration the draft environmental impact statement prepared by the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, Department of Commerce, on the Proposed Virgin Islands Coastal Management Program.

Any written comments or questions you may have should be submitted to the contact person identified below by March 26, 1979 . Also, one copy of your comments should be sent to me in Room 3425, U.S. Department of Commerce, Washington, D.C. 20230.

CONTACT PERSON
Gulf/Islands Regional Manager
Office of Coastal Zone Management
3300 Whitehaven Street, N.W.
Washington, D. C. 20235
Telephone: 202/634-4132

Thank you for your cooperation in this matter.

Sincerely,

Sidney R. Galler

Sidney R. Galler
Deputy Assistant Secretary
for Environmental Affairs

Enclosures

TABLE 5.2
PRIORITY OF USE DESIGNATION

LEGEND

- ● First Priority
- ◒ Second Priority
- ⊖ Third Priority
- ○ Not Permitted
- Not Applicable

USES	COASTAL ENVIRONMENT: HIGH RELIEF/ROCKY SHORE	LOW RELIEF/ROCKY SHORE	URBAN DEVELOPED	INDUSTRIAL	DEVELOPED BAY	BEACH	MANGROVE	SALT POND	GRASS BEDS / ALGAL PLAINS	SAND BOTTOM	CORAL REEF/ALGAL RIDGES	OFFSHORE ISLANDS AND CAYS	OPEN WATER
HEAVY INDUSTRY													
water dependent	○	○	⊖	◒	◒	⊖	○	○	⊖	◒	⊖	○	◒
water related	○	○	⊖	◒		○	○	○				○	
non water oriented/related	○	○	○	○		○	○	○				○	
UTILITIES													
waste water treatment facilities	⊖	⊖	⊖	●		⊖	○	○				⊖	
waste water treatment outflow	◒	◒	⊖	◒	⊖	⊖	○	○	⊖	●	⊖	⊖	◒
water and power facilities (water dependent)	○	⊖	⊖	◒		⊖	○	○				⊖	
RESIDENTIAL													
high density	⊖	⊖	⊖	○		○	○	○				⊖	
low density planned - med. density subdiv.	⊖	◒	⊖	○		○	○	○				⊖	
low density	◒	◒	○	○		○	○	○				⊖	
SOLID WASTE DISPOSAL													
sanitary landfill	○	○	○	○		○	○	○				○	
marine landfill					○	○	○	○	○	○	○	○	⊖
artificial reef construction					⊖		○	○	◒	◒	◒		◒
AGRICULTURE													
grazing	◒	◒										◒	
cropland	⊖												
RECREATION													
water dependent (passive)	◒	◒	◒	⊖	◒	◒	◒	⊖	◒	◒	◒	◒	◒
non water dependent recreation	⊖	⊖	⊖	○		○	○	○				⊖	
conservation (undeveloped/open space)	◒	◒	◒	⊖	⊖	◒	◒	◒	◒	◒	◒	◒	◒
preservation	◒	◒	◒	⊖	⊖	◒	◒	◒	◒	◒	◒	◒	◒
HOTEL/RESORT	⊖	⊖	⊖	⊖		○	○	○				⊖	
COMMERCIAL													
water dependent	○	○	◒	⊖		○	○	○				○	
water related	○	◒	◒	⊖		○	○	○				○	
non water dependent/related	○	○	○	○		○	○	○				○	
LIGHT INDUSTRY (Light assembly and textile wholesaling, warehousing)													
water dependent	○	○	◒	◒		○	○	○				○	
water related	○	○	⊖	◒		○	○	○				○	
non water dependent/related	○	○	⊖	⊖		○	○	○				○	
MINING (extraction)	⊖	⊖	○	○	○	○	○	○	○	◒	○	○	◒
PORT FACILITIES													
cruise and passenger facilities	○	⊖	◒	◒	◒	⊖	○	○	⊖	◒	○	○	◒
freight facilities	○	○	◒	◒	◒	⊖	○	○	⊖	◒	○	○	◒
marina facilities	⊖	⊖	◒	◒	◒	⊖	○	⊖	⊖	◒	○	⊖	◒
"traditional" waterfront use (banana boats, docking.)	◒	◒	◒	◒	◒	◒	⊖	⊖	◒	◒	⊖	◒	◒
navigational aids	●	●	●	●	●	●	⊖	⊖	●	●	●	●	●
TRANSPORTATION													
roads	⊖	⊖	⊖	⊖		○	○	○				○	
parking facilities	○	○	○	⊖		○	○	○				○	
seaplane/helicopter facilities	○	○	◒	◒		⊖	○	○				○	
NATIONAL DEFENSE	●	●	●	●	●	●	●	●	●	●	●	●	●
FISHING													
recreational/light commercial (traditional)					⊖		◒	⊖	⊖	●	⊖		◒
mariculture					⊖		◒	◒	◒	◒	◒		◒
commercial					○		○	○	⊖	◒	⊖		◒
OTHER COASTAL RELATED ACTIVITIES													
dredging					◒	⊖	○	○	○	◒	○	⊖	
fill/spoil disposal					⊖	⊖	○	○	○	○	○	⊖	○
blasting					○	⊖	○	○	○	○	○		○
"blow-out"					○	○	○	○	○	⊖	○		○
site clearing	⊖	◒	◒	◒		○	○	○				⊖	
excavation	◒	◒	◒	◒	⊖	○	○	○	○	○	○	⊖	○

use priority concepts using the coastal environments and a listing of uses. A priority rating is assigned to each use for each coastal environment. The scale of priority designations ranges from a rating of one ◑ for those uses which should have first priority in a particular coastal environment, to a rating of three ⊖ for third priority uses, and ○ for uses that are not permitted.

GUIDELINES

The following is a set of guidelines for development in specific coastal environments. These guidelines were developed consistent with the coastal policies, use priorities, and study procedures. Certain guidelines were utilized in developing a coastal land and water use plan, and will serve as a basis for developing the rules and regulations and standards for the permit system, and zoning revisions (See Chapter Eight, Mechanisms for Implementation).

STEEP AND LOW RELIEF SHORELINES

Steep slopes are most appropriate for low intensity uses, water dependent recreations, conservation and watershed protection, siting of navigational aids, controlled grazing and low density residential development.

The most appropriate uses for low relief shorelines are grazing, agriculture, conservation and low and medium density development.

Areas of severe building constraints should be utilized as greenbelts by zoning for open space, fee simple acquisition, or purchase of scenic easements or development rights.

Structures should be regulated with respect to height restrictions, setback, site preparation and landscaping and color, particularly on the crest of hills, ridgelines and other highly visible and/or aesthetically vulnerable areas.

Development should be clustered to minimize visibility and more efficiently utilize land.

DEVELOPED BAYS AND SHORELINES

The urban waterfront should be reserved for recreational and traditional uses, conservation, water dependent commercial activities, navigational aids, limited cruise and passenger facilities and other water dependent transportation.

The management program should be closely related and coordinated with Historic District activities of Charlotte Amalie, Christiansted and Frederiksted.

Waterfront parks should be given greater attention. Existing parks should receive priority

from Conservation and Cultural Affairs beautification funds. An effort should be made to create new parks, even vest-pocket parks, along urban waterfronts - especially in the many areas in which re-development is anticipated.

Developed industrial areas should be reserved for water dependent transportation and port facilities, water dependent/related uses, special needs, heavy and light industry, and utilities siting.

Developed bays should be reserved for port and marine facilities, industry, and where appropriate, waterfront recreation.

Marina capacity should be increased by the use of dry-land storage areas, with careful landscape integration to eliminate extensive docks and slips.

Because of limited circulation and existing pollution load, developed bays should not be considered for direct waste discharge of any type.

BEACHES

All sand beaches should be conserved for recreational purposes. Other appropriate beach uses are traditional docking and boating and navigational aids.

Beaches not designated as recreational, may be designated for a wider array of water dependent uses, consistent with other policies and recommendations.

The construction of new, large-scale beachfront resort complexes should not be encouraged.

Dredging in bays with beaches should not be allowed, except under carefully planned and monitored conditions.

Shoreward earth change and drainage modifications must be controlled to protect beach areas from pollution by storm runoff.

Structures (pipes, docks, groins, walls) should never be constructed across, or at right angles to, a beach unless careful, extensive study of alongshore sand transport regimes indicate they will be innocuous or advantageous.

Sand should not be removed from beaches.

Structures in beach areas should be regulated with respect to color, height and vegetative screening, and landscaping.

MANGROVES

The remaining large mangrove areas (especially Salt River, St. Croix and Jersey Bay, St. Thomas) should be placed in the territorial park system. Their development should be restricted for recreational, aesthetic and research and teaching use. Only minimal, carefully planned construction,

compatible with their protected status, should be permitted.

As a rule, dredging and filling should be prohibited except on a small, carefully controlled scale and only if through study has indicated the absolute necessity for some purpose which is consistent with protective management.

Sport fishing may be permitted, but it may also be necessary to specify allowable areas, fishing gear and

Boat traffic within the area must be strictly controlled. Some portions may be opened to small outboard powered boats, while other areas (shallows, quiet waters, muddy bottoms) should be closed to all motor boats.

Points for small boat docks, launching ramps, and other access structures should be carefully selected and structures carefully planned, constructed, licensed, and managed.

No waste discharges or pollution substances of any kind should be permitted into the area. Upland sewage systems should provide for treatment or recycling which will not allow seepage of effluent to shore waters.

Development guidelines should be promulgated for the watershed which drains into the mangrove areas in order to control the volume of runnoff.

By zoning, licensing, or other appropriate controls, buffer zones should be maintained adjacent to the mangrove area to minimize runoff, erosion, and air or water pollution which may adversely affect the mangrove area. Impervious surfaces (asphalt, concrete, etc.) should be kept at a minimum and previsions made to impound runoff from such surfaces and store it for use or percolate it into the soil.

Within the context of the recommended protected status the natural attributes of the two large mangrove areas (Salt River and Jersey Bay) should be developed for multiple uses to translate these attributes into useable social resources. Use of the areas could include passive recreation (nature trails, underwater trails, hiking), controlled fishing, swimming, and educational study.

SALT PONDS

The most appropriate and highest priority use for many salt ponds is the preservation and maintenance of their function as sediment traps and wildlife sanctuaries.

Management of salt ponds should be undertaken on an individual basis with the impacts of modifications assessed. The relationship of each pond to the surrounding watershed should be determined. This consideration may determine whether or not pond modification is advisable and what alternate or restorative drainage provisions are required.

No waste discharge or dumping should be permitted.

Watershed drainage and runoff patterns which would adversely affect ponds should not be permitted.

MARINE MEADOWS (GRASS BEDS)

Priority uses for marine meadows and algal plains are conservation (with limited fishing) and carefully monitored mariculture.

Any uses in or adjacent to marine meadows and algal plains that create chronic, heavy turbidity or otherwide impede sunlight penetration, or cause perturbation, should be prohibited.

In cases where marine grass beds or algal plains must be damaged during construction of projects not contrary to the public interest, project design shall include re-establishment of bottom conditions favorable to natural regeneration of sea grasses.

Unless a bay has been committed specifically for anchorage areas, boat density should be specified. Fixed moorings, privately or publicly maintained and leased, are essential.

SAND BOTTOMS

Because a critical shortage of sand and aggregate material exists in the Virgin Islands, it is recommended that further detailed studies be conducted to locate areas that are environmentally and economically viable for extraction.

Use options should be considered in light of the relatively tolerant quality of the habitat. The uses of sandy areas should be consistent with maintenance of adjacent reefs, beaches, grass beds, etc.

CORAL REEFS AND ALGAL RIDGES

As with salt ponds, the importance of coral reefs and algal ridges should be assessed on an individual basis to determine the value to ecological systems and man.

Certain areas should be given high priority for preservation and conservation, particularly those with high aesthetic and natural resource attributes, or where wave abatement is necessary. Uses such as recreational diving, mariculture, siting navigational aids, and recreational and traditional fishing should be encouraged and permitted where appropriate.

Localized development of marine parks and underwater trails in conjunction with sound environmental management practices may be permitted.

Except where absolutely necessary, reefs and ridges should not be subjected directly to filling, cutting, blasting or waste discharge of any type.

Chemical or thermal discharges should not be permitted.

All shore and water related developments should be evaluated for their relationship and possible effects upon adjacent coral reefs and algal ridges.

There should be strict enforcement of the Earth Change Law and revegetation required for all inland development to prevent excessive siltation and sedimentation.

Salt ponds and mangroves, with their natural capacities as sediment traps and filters, should be maintained to insure that water quality parameters necessary for reef and algal ridge survival are preserved.

OFFSHORE ISLANDS AND CAYS

In keeping with their importance as wildlife habitats, their generally "wild" and remote character, and the recommendations of the Department of Conservation and Cultural Affairs, certain cays should be set aside as inviolate wildlife sanctuaries.

Other publicly owned cays should be developed for multiple use as recreation and nature areas, but any alternate or coincident use of a cay should be compatible with maintaining its value as a wildlife area.

For those cays and islands where development is permitted, site preparation and development design guidelines should be developed and strictly enforced.

Land and Water Use Plan

The Coastal Land and Water Use Plan (CLWUP) constitutes a comprehensive plan for the development of the first tier of the coastal zone. All zoning amendments, capital improvement programs or projects, government land acquisition programs, land subdivisions, and other development activities should be consistent with the Coastal Land and Water Use Plan. This plan is intended to serve as a policy guide for decision-making relative to development activities in the first tier of the coastal zone.

The Plan (see attached maps) graphically represents a series of proposed use designations for the first tier of the coastal zone. Nine land and water use categories were developed spanning a continuum of use intensity ranging from preservation (no development, limited activity) to industrial (high intensity uses and activities such as petroleum refining or desalinization plants). The recommended goals and policies, the designation of permissible land and water uses, and the priority of use, reflected in the preceding section of this chapter, served as the foundation for plan development. Based upon the suitability, one of the nine broad categories was assigned each section of the first tier of the coastal zone.

Table 5.3, the Coastal Land and Water Use Classification System, illustrates the relationship between the general land and water use categories, the coastal environment concept and the array of permitted uses.

TABLE 5.3

COASTAL LAND AND WATER USE CLASSIFICATION SYSTEM

LAND AND WATER USE CATEGORY	COASTAL ENVIRONMENT	USES
Preservation	Mangroves Salt Ponds Reefs and Algal Ridges	limited passive recreation and scientific study
Conservation, Preservation, Traditional Uses	Urban Waterfronts Marine Meadows and Algal Plains Beaches Reefs Salt Ponds	agriculture/mariculture water dependent recreation traditional docking and fishing
Protection, Residential/Low Density	Steep Slopes Low Relief	low density residential (one and two family dwelling), Agriculture
Residential Medium Density	Low Relief Beaches Developed	medium density residential (multi-family dwelling unit) hotel/resort
Residential High Density	Developed	hotel/resort, high residential (multi-family dwelling unit) development
Water Dependent and Related Commercial and Marine Facilities	Developed Shorelines and Waters Sand Bottoms	low intensity port and marine and commercial facilities, that require a coastal location (marinas, cruise ships, mining)
Water Dependent and Related Industrial Marine Facilities	Developed	high intensity port and commercial and industrial uses that require a coastal site (container docks, water and power plants)
Commercial	Developed	business and other commercial uses not requiring a coastal location (warehousing, retail business)
Industrial	Developed	industrial uses not requiring a coastal location

Although this plan identifies uses and development that should be carried out and should be prohibited within areas in the first tier of the coastal zone, such uses and restrictions are suggested but not mandatory until such time as the Virgin Islands Zoning and Subdivision Law, Title 29, Chapter 3 of this Code, is amended to reflect the provisions of the Coastal Land and Water Use Plan. The land and water use classification system is defined below:

Preservation District

This district comprises areas that provide valuable public benefits but cannot tolerate the impacts of development. The majority of these areas are owned by the Virgin Islands Government. These areas include mangrove lagoons, many offshore islands and cays, most coral reef and algal ridge systems and certain salt ponds. Mangrove areas provide habitat for rare and endangered species; function as a breeding ground and nursery for fish and other related marine species; and trap sediment and debris to maintain coastal water quality. Offshore islands and cays represent relatively pristine natural environments, nesting sites for local and migratory birds and turtles, some of which are rare and endangered species, and are characterized by a general lack of accessibility and other use constraints. Coral reefs and algal ridges have narrow tolerances to such environmental variables as temperatire, salinity, turbidity, eutrophication, and effluent discharges. Reefs protect shoreline areas by abatement of waves, and most species of finfish and shell fish either live on the reefs, or depend on them for nutrients. Salt ponds have a high vulnerability to physical alteration with sediments unstable for foundations. Salt ponds function as a natural catchments and settling basins to receive, trap and filter run-off. These areas should be preserved in their natural condition.
Uses and Development Permitted: No development is permitted except pursuant to restoration. No uses are permitted except those either in conjunction with passive recreation and programs for research or those determined by the Commissioner to be consistent with the purposes of the district.

Conservation, Recreation, Traditional Uses District

The district consists of areas where present functions and uses should be contained. These areas include sand beaches, many of which are being utilized for recreational uses, portions of urban waterfronts including sections of the shoreline devoted to traditional and highly valued activities such as fishing, boating and docking, and agricultural uses. Many of the beach areas

are highly mobile, and serve as buffers to protect shorefront property from wave action. They are vulnerable to aesthetic intrusions and the impact of vegetative clearings, building scale and height, and roadcuts and foundations. Beaches and the waterfronts serve as valuable recreational and aesthetic assets and are highly valued in their natural state by residents and visitors alike. Presently, only limited waterfront is available for public beaches and it is anticipated that the need for these areas will increase. Furthermore, many beaches, urban waterfronts, and sections of the shoreline are areas used for traditional activities.

Uses and Development Permitted: Present uses, ancillary structures found appropriate by the Commissioner, such as residences where agriculture is the present use; accessways, changing rooms, boardwalks, concessions, and park fixtures where recreation beach use is predominant; and small piers, docking facilities and waterfront markets where fishing and boating are predominant as in urban waterfront areas.

Protection, Residential Low Density District

This district consists mainly of hillsides, many of which are characterized by slopes greater than 20 percent, minimum soil depths over rocky surfaces, moderate to severe susceptibility to erosion upon site disturbance and high potential for creating unpleasant appearances if heavily developed. Sewage disposal is normally by septic tanks. These areas may be developed for low density residential uses if care is taken in siting, design and construction. But they are not generally amenable to large scale development or high intensity uses requiring extensive site coverage.

Uses and Development Permitted: One or two family detached or attached residential units with moderate cluster development in suitable areas, and ancillary structures deemed appropriate by the Commissioner.

Residential, Medium Density District

This district contains a small number of areas that possess the necessary topography and available services, such as sewer and water facilities, utilities and roads, to support multi-family housing, apartments, condominiums and moderate sized hotels. To a large extent the areas in this district already have been developed for such purposes and further like development,

to the extent feasible, would be valuable both for housing purposes and for the economy of the Virgin Islands.

Uses and Development Permitted: Uses and development presently permitted in the Protection, Residential Low Density District and such residential structures as are permitted in the R-3 and R-4 Zoning District and such ancillary structures and uses deemed appropriate by the Commissioner.

Residential, High Density District

This district covers a very small area presently devoted mainly to large hotels and high density apartments, condominiums and ancillary structures and uses to the tourist industry of the Virgin Islands.

Uses and Development Permitted: Uses and development permitted in the other two residential districts; residential and tourist residential structures as are permitted in the R-5 Zoning District; and ancillary-structures and uses deemed appropriate by the Commissioner.

Water Dependent and Related Commercial-Marine Facilities District

This district consists of areas best suited for non-industrial commercial uses which require direct waterfront access, such as marinas, docks and associated facilities for cruise ships, and docks and associated facilities for cargo ships. These uses are vital for the Virgin Islands and there is a need to accommodate some growth in these activities. Suitable sites for these activities are ones where irretrievable destruction of vital marine resources will be minimized. Most of the areas contained in this district are near presently developed bays and shorelines or in areas with existing environmental pertubations. Because the number of such areas is small, this district should be limited to water-dependent uses and new development which is non-water related should be excluded.

Uses and Development Permitted: Marinas, dock facilities for cruise and cargo ships and such other non-residential uses and development and ancillary structures deemed appropriate by the Commissioner.

Water Dependent and Related Industrial-Marine Facilities District

This district consists of limited areas needed to accommodate industrial uses which require direct waterfront access, such as oil ports, desalinization plants, and energy facilities.

Commercial - Industrial District

As sufficient suitable interior sites for certain non-water dependent or related uses may not exist, certain non-water dependent or related uses will be permitted in some areas of the first tier of the coastal zone. Appropriate coastal areas, but not the immediate shoreline, have therefore been designated for such commercial and industrial development. Uses permitted within these categories correspond to the existing zoning classifications. Commercial uses are those permitted within the present C or B zones. Industrial uses are those permitted in the I-1 and I-2 zones.

Federal Lands

Those lands owned in fee simple by the United States government are indicated by the shaded areas on the maps.

IMPLEMENTATION OF THE COASTAL LAND AND WATER USE PLAN

To implement the goals, policies and coastal land and water use plan of the CZMP zoning districts established under the Zoning Law, will be used in conjunction with a proposed coastal zone permit mechanism (see Chapter Eight, Mechanisms for Implementation). The islands are presently divided into seventeen (17) use districts including agricultural, residential, business, commercial, industrial, waterfront, and public (see Chapter Three, Present and Future Shoreline Uses). These districts with some modifications will be used to implement the CLWUP. In instances where the present zoning of the area conflicts with the proposed use plan designation, changes will be made in the existing zoning classification or new categories will be created. Requirements pertaining to existing zoning districts under the Zoning Law will be maintained and/or modified (height limits, off-street parking, minimum lot size, and lot coverage). The uses allowed within each district are listed in a "Table of Permitted Uses" in the Zoning Law. The list of uses will be made consistent with the Land and Water Use Plan designation for coastal areas by deleting and/or

adding certain uses. Accordingly, in certain instances, the Zoning Law and District Maps will be amended. The following are examples of the types of zoning districts that may be established in the first tier of the coastal zone.

Use Districts

RP - Resource Protection (proposed)

A - Agriculture

R-1 - Residential Low-Density (4. dv./ac.)

R-2 - Residential Low-Density (3 dv./ac.)

R-3 - Residential Medium-High (80 persons/ac.)

W-1 - Water Commercial

W-2 - Water Commercial Industrial

W-3 - Water Commercial Industrial-Heavy (proposed)

P - Public

CHAPTER SIX

Shoreline Access and Use

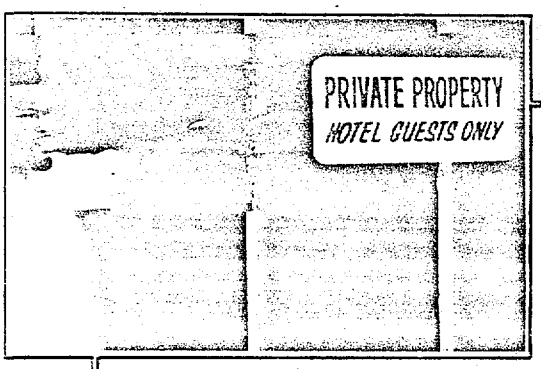
This chapter represents a portion of the development of the shoreline access and use element of the Virgin Islands CZMP (pursuant to Section 305(b)(7), CZMA Amendment of 1976, P.L. 94-370). The development of a process for the protection of shoreline areas of environmental, aesthetic, recreational, historical, cultural and ecological value are demonstrated in other sections of the Program concerned with goals, objectives and policies; Areas of Particular Concern; and the Coastal Land and Water Use Plan. In addition to a brief legal analysis of the shoreline access issue, critical areas are identified, and recommended future policies are outlined.

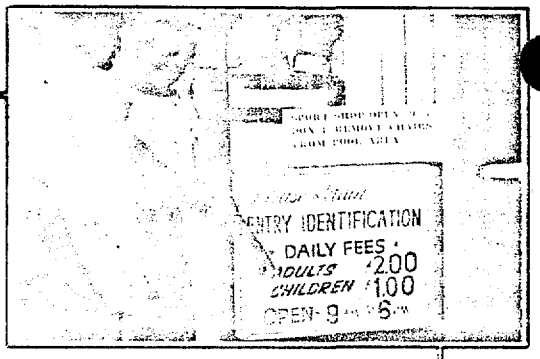
Background of the Problem

The importance of the shoreline to the lives of the people of the Virgin Islands is manifest. However, in the last quarter century, the patterns of shoreline use in the Territory have been drastically altered. Several beaches and shoreline areas convenient to many users have disappeared due to dredging, the mining of sand, landfill operations, or commercial developments. Some have been severely altered as a result of the secondary effects of shoreline development. Additionally, access to beaches has been intentionally or unintentionally restricted by the construction of many projects, most notably large tourist oriented hotels and condominiums. Accordingly, shoreline, and particularly beach access, has developed into an important social, political, and legal issue in recent years.

In the past several years, considerable legislative and judicial attention has been devoted to preserving and establishing the public rights in and on the shorelines of the Virgin Islands. Considerably less attention and energy has been directed to providing public access rights to the shoreline.

The principal issue involved with shoreline access is that of the public's right to free and unrestricted use of the recreational beaches of the Virgin Islands. The territorial government took action to remedy the latter situation by enacting the "Open Shorelines Act" (No. 3063)





DO WE WANT MORE OF THIS?
ARE PORTABLE SWIMMING POOLS ACCEPTABLE?
THOUSANDS OF VIRGIN ISLANDERS SAY NO!

The answer from our Legislators is embodied in Bill No. 4849, which, although recognizing the moral, legal and philosophical issues of the people's right to use the shorelines and beaches, has DISTINCTLY STRONG NEGATIVE features:

1. It is an ambiguous and misleading Bill which is not firm in protecting the people's right to free public use of beaches and shorelines.
2. The major part of the Bill echoes the opinions of the very persons and organizations who showed contempt for our community by suggesting FIRST CLASS BEACHES FOR TOURISTS, SECOND CLASS BEACHES FOR RESIDENTS.
3. The bill names an unnecessary committee to be made up of Government officials and alleged experts who are NOT REPRESENTATIVE OF THE PEOPLE. These individuals showed no initiative and concern and were strangely silent when the issue was brought to the public's attention.

What does the future hold for our Virgin Islands?

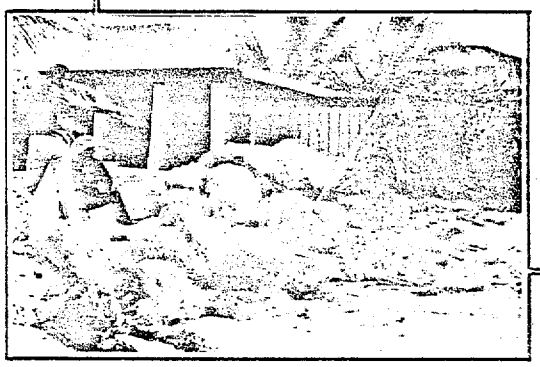
WHO WILL LISTEN TO THE PEOPLE???

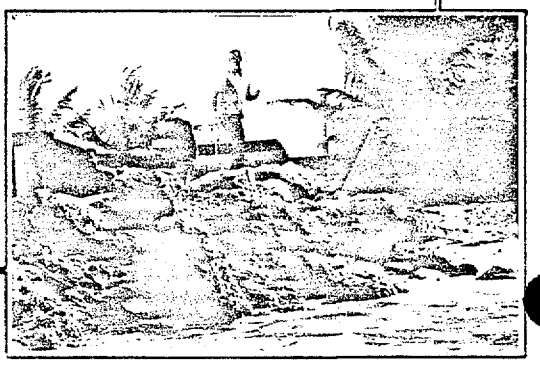
In the past, the wishes of those with money and position prevailed. Now — will our Elected Representatives heed the voice of the people or will they continue to SELL US OUT???

Every able-bodied thinking Virgin Islander is needed to support this Project. Take your family and visit the Beaches regularly . . . DO NOT PAY TO SWIM!

BEACHES BELONG TO YOU!
DEMAND YOUR RIGHT!

CITIZEN COMMITTEE FOR FREE BEACHES FOR ALL — June 1971





in 1971. Essentially, the Act affirms the public's right to use the shorelines of the islands. The shoreline, as defined by the Act includes "the area along the coastline ... from the seaward line of low tide, running inland a distance of fifty (50 feet; or to the extreme seaward boundary of natural vegetation which spreads continuously inland, or to a natural barrier; whichever is the shortest distance.)

While this legislation assures the citizens of the Virgin Islands of seaward access and lateral use and access along the shoreline, it does not assure landward access. An upland property owner is not required to permit beachgoers to cross his land to reach the zone of public use. Because of the terrain, and the pattern of development in the islands, landward access is often a critical factor in beach use.

Beach Inventory

In the spring of 1976, the Office of Planning and Development of the Department of Conservation and Cultural Affairs, in conjunction with the CZMP study of the Virgin Islands Planning Office, undertook a complete field inventory of Virgin Islands beaches. An evaluation of this type was called for in the 1971 Open Shorelines Act. The study was undertaken to help identify those beaches for which territorial governmental action was needed to secure public landward access.

The beach inventory procedures were developed to assess the particular conditions in the Virgin Islands and consisted of two parts. The first records objective physical, recreational, and land use data for each beach. The other consists of an evaluation of the scenic and environmental quality of the site. The beach inventory form is included in Appendix F, and a copy of the inventory for Cruz Bay, St. John is included as an example of the manner in which information was collected.

The CZMP has used the inventory information as a basis for recommending shoreline areas where: 1) access or right of use should be secured, or 2) areas where action should be taken to assure that existing access or use is preserved.

BEACH EVALUATION AND RECOMMENDED CRITICAL AREAS

The criteria which were used to identify and evaluate the critical shoreline areas are discussed below. A listing of the critical areas which were identified in the preliminary assessment is also included.

CRITERIA FOR EVALUATING BEACHES

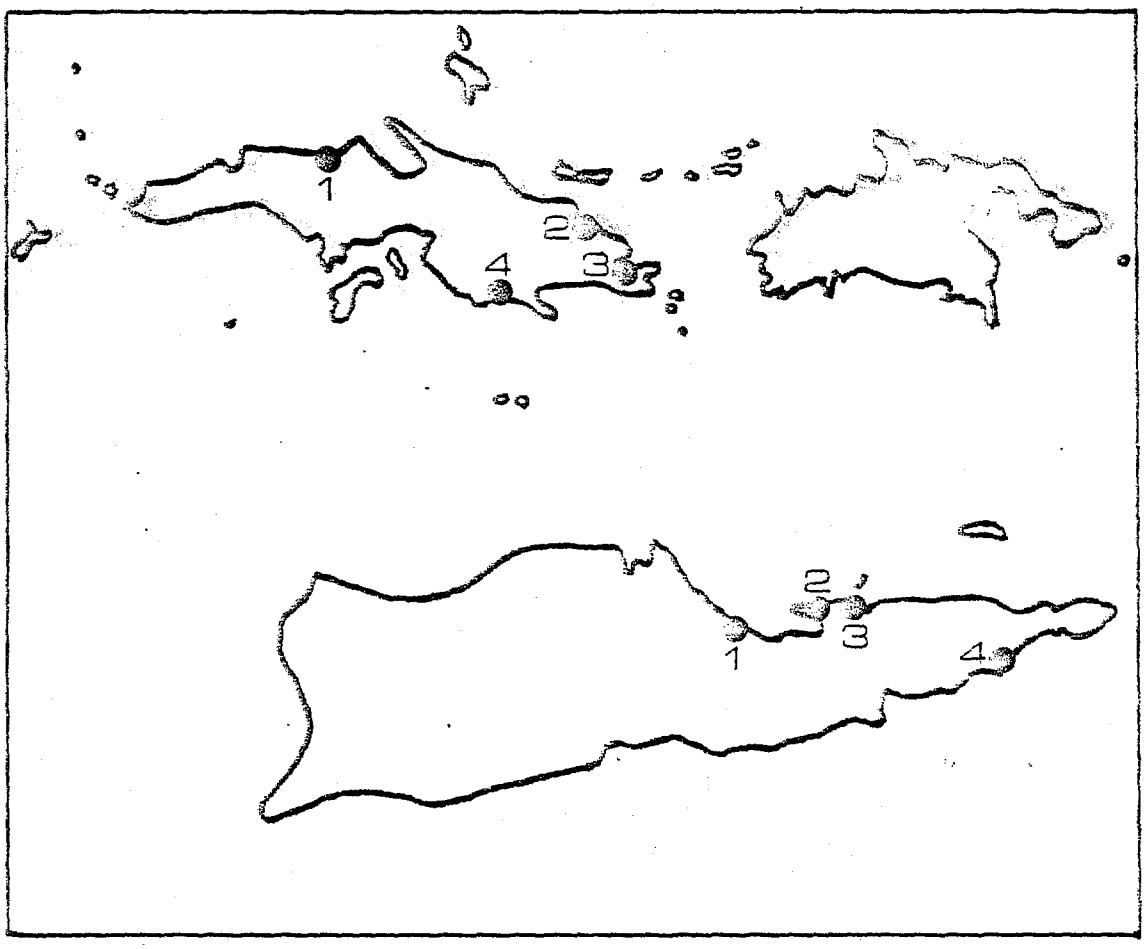
1. Accessibility - Beaches were evaluated on the basis of proximity to population concentrations, and by the presence of an access road usable by the general public. This factor will prove of importance since it appears that the territorial government may become responsible for beach maintenance.
2. Beach Quality - Evaluation of beach quality was based on the factors such as the area of the beach, the beach material, the type and appearance of shoreline vegetation, the attractiveness of the user's view from the beach, and the beach's scenic quality. These factors are complementary rather than cumulative. Therefore, a very attractive small beach may receive a heavier weighting than a large uninteresting one.
3. Potential for Multiple Activities - In addition to swimming, the potential of each beach for other water-related activities, such as snorkeling, offshore diving, or pleasure boating was noted. The inventory of land-based activities included picnicking, tidal pool walking, and the possible educational opportunities offered by historic ruin or a salt pond. Beaches which offer users a choice of activities were rated more highly than "swimming only" beaches.
4. Environmental Damage Potential - At several of the beaches inventoried, the existing land use was natural open space. Very often these areas constitute extremely fragile offshore and onshore environments. This is especially true of several beaches in northeast St. Croix which cannot sustain heavy use without environmental damage.
5. The Multiple Effects - Priority attention was given to the sites which are potentially the basis of a complex recreational facility, or where a single easement will provide access to an extensive shoreline.
6. Access - Priority attention has also been given to those areas which ranked high in criteria 1-5 and where access is threatened. These areas included beaches and shoreline areas where access is presently restricted or where an impending or proposed development may restrict free access in the near future.

RECOMMENDED TARGET AREAS

Based on the assessment criteria a list of shoreline areas is recommended that access and right of use be secured. Only St. Thomas and St. Croix are dealt with since the most significant beaches in St. John are already within the National Park. The following represents the preliminary recommendations to date (see Figure 6.1).

FIGURE 6.1

TARGET BEACH AREAS



ST. THOMAS

1. Dorothea Beach
2. Smith Bay
3. Mueller-Vessup-Great Bay Beaches
4. Bolongo Bay

ST. CROIX

1. North Christiansted Beach
2. Buccaneer Beach
3. Cheney Beach
4. Grass Point

St. Croix:

1. North Christiansted Beach - This beach area extends from the vicinity of St. Croix by The Sea southward to the Nature Conservancy property at Little Princesse. The shoreline here is extensively developed by condominium complexes while further inland there are numerous multi-family housing projects. The area is heavily populated and there are few recreation facilities available for local residents. Beach access is restricted to condominium residents, largely as a result of poor public access.
2. Buccaneer Beach Area - This sandy beach is located east of Christiansted, adjacent to the Buccaneer Hotel. The beach is immediately east of, but not accessible from, the territory's recreational complex at Altona Lagoon. The primary importance of this area is its close proximity to the Christiansted urbanized area. Access is presently restricted by a use fee.
3. Cheney Bay - Cheney Bay Beach is situated on the north shore of St. Croix, east of Christiansted. Green Cay is just one-quarter mile offshore. There is a fine sandy beach with potential for swimming and picnicking. Southgate Pond, which is situated within this area, has declined recently in biological productivity, but is still a significant breeding ground and refuge for indigenous and migratory birds. Their ecological and educational value is important. In addition, there is a long history of public use of this area.
4. Grass Point - Grass Point is located on the southeast coast west of Turner Hole. Traditionally this site has been one of the favorite St. Croix picnicking areas. The present owners discourage use of the site for picnicking.

St. Thomas:

1. Dorothea Beach - The Dorothea Beach is located on the northwest shore of St. Thomas opposite the Brass Islands. This beach is lushly vegetated, highly scenic, and has an excellent view of Inner Brass Island. Although Dorothea and Neltjeberg Beaches are suitable for swimming and snorkeling purposes, the potential for land-based activities in this area is also considerable. These activities include: picnicking; tide pool walking; historical, archaeological, geological and biological interpretation; and hiking both on the shore and on adjacent uplands owned by the Government of the Virgin Islands. The area is also suitable for expanded access and parking.
2. Smith Bay - Smith Bay Beach is located on the east end of St. Thomas near the growing population centers at Estate Smith Bay and Tutu. The crescent-shaped white sand beach of approximately one-quarter mile is located on a protected bay. The beach uplands are relatively undeveloped at this time. In addition to good swimming and snorkeling, the beach is a popular

picnicking spot which is used by organized groups with the owner's permission. Although the vegetative cover is not dense, there are many large shade trees on the beach and fine views of St. John and the offshore cays.

3. Mueller-Vessup-Great Bay Beaches - Mueller Beach is located on the east end of St. Thomas at Mueller Bay, just south of Vessup Bay. Vessup Bay Beach is adjacent to this area on the east and is separated by a large rock outcropping. The inland area behind both beaches is largely undeveloped, with only a few scattered single family homes. Public access to these areas is poor; however, both are presently used to some extent by local residents for picnicking and swimming. Great Bay Beach (often called Bluebeard's Beach) is just south of this area. Here too, there is limited public access. There is an existing hotel development along this beach. The prime feature of these beach areas is their proximity to the growing population of the east end of St. Thomas.

4. Bolongo Bay Beach - Bolongo Bay Beach is located on the southeast shore of St. Thomas about midway between Frenchman's Reef Hotel and Benner Bay. There is about 1000 feet of sandy beach here with some rocky bottom close to shore. An excellent reef with good snorkeling is just offshore. Adjacent to the beach area is a 35 unit hotel and private beach club. Access through its beach club property is restricted to members. It is possible to reach the beach laterally via a dirt road at the extreme western edge of the beach.

Options for Action

The Government of the Virgin Islands has several options to secure public access and use of the shorelines where such access is now restricted. These include (1) judicial determination or confirmation that public rights of access have existed as in the doctrines of implied dedication and customary use; (2) acquisition through the use of police power; and (3) acquisition in the open market via expenditure of public funds. The principal attributes of each type of action is outlined briefly in the following sections.

(1) JUDICIAL DETERMINATION

There are two primary theories supporting the creation of public access rights over private land of non-consenting landowners. One theory is implied dedication. Closely akin to this theory is the doctrine of adverse possession and prescription which, for the purpose of this discussion, will be analyzed in the same manner as implied dedication. The other theory is customary use.

ADVERSE POSSESSION, PRESCRIPTION, IMPLIED DEDICATION

Adverse possession, prescription, and implied dedication are legal doctrines which recognize that under certain circumstances, rights to land may be obtained through use and may be applied

to maintain public access to privately held shoreline areas. To secure this right under adverse possession and prescription, the use must be actual, adverse, continuous and uninterrupted in the lands of another, and either be conducted with the knowledge of the owner, or so open, notorious, and visible, that knowledge of the use is implied to the owner.

These are subtle, if not clearly agreed upon, distinctions between adverse possession and prescription. In adverse possession, the claimant must be in "possession" of land, while under prescription, the claimant may have the use or privilege without possession. Furthermore, under the doctrine of prescription the owner may enjoy the use in common with the claimant. With adverse possession he may not.[1] The Virgin Islands Code (Title 28, Chapter 1, Section 11) statutorally defines adverse possession. The Code recognizes that exclusive actual, physical, adverse, continuous or notorious possession of real property after fifteen years or more shall be conclusively presumed to give title thereto, except as against the government.

The theory of implied dedication is also a common law doctrine and like adverse possession and prescription the key issue is that a landowner by his conduct (express or implied actions), has indicated an intent to dedicate his land for public use, and that public use itself is evidence of the public's intention to accept the dedication offered. The landowner's inaction may be evidence of his acquiescence in the public use and thus of his intention to donate land. A recent California Supreme Court decision recognized and affirmed the importance of the adverse public use, rather than the owner's donative intent, as being the critical doctrinal element supporting the conclusion of public use.[2] The court allowed the dedication of use only after five years of public use.

Whether the theory be one of implied dedication or perspective rights the result is the same: the public, by using the property in a particular way for a particular purpose, in a manner adverse to the true owner for a period of years, acquires the right to continue to use such property, regardless of the landowner's later intent or actions. In light of a recent litigation, implied dedication will necessitate the documentation of access or use over a period of time. While this procedure may require little capital outlay, there may be lengthy legal procedures, thus making this option less satisfactory than others.

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[1] Downing v Beid (Fla. 1958) 100 Sd. 2nd, 57,64,65 Supreme Court

[2] Dietz v King and Gion v City of Santa Cruz - The Court held that there had been an implied dedication of an easement for recreational purposes because the public had used the land for more than five years with "knowledge of the owner, without asking or receiving permission to do so."

CUSTOMARY USE

Customary use (or customary right) is a legal doctrine which arose in medieval England and which until recently had little application in the United States. The doctrine establishes that customary use of land peaceably engaged, consensual or not, for a long period of time without a claim of superior right interrupting such use, establishes public rights in such land without regard to the record title held by private landowners.

Customary right arose in favor of the community and was strictly limited to a small geographic location. Examples of local customary rights included the right to place nets on a certain beach, to use a certain green, or pasture animals in a certain field. Only easements of passage or use are obtained through custom. Recent court rulings, however, have expanded this doctrine. The Oregon Supreme Court ruled that the doctrine applied to the entire State coastline, rather than just the particular property under litigation.[3]

The doctrine of customary use of beaches was recognized as being applicable in the Virgin Islands in the recent decision of the United States of America and Government of the Virgin Islands v St. Thomas Beach Resorts, Inc., VIDC Number 74-339, affirmed by the Third Circuit of Appeals, Number 75-1242 (3d Cir., 1976), more commonly known as the Bolongo Beach Case. The court upheld the constitutionality of the Open Shorelines Act which sought to recognize and maintain this public right of use. However, it did not address the issue of rights to traverse private property for the purpose of gaining access to the shoreline.

Securing beach access through the customary use doctrine would require no capital outlay on the part of the Virgin Islands Government. It would, however, require lengthy court procedures and a documented history of public use over a long period of time. This action has one built-in advantage. Culturally important beaches which have sustained public usage over a period of years are those properties for which a case for customary usage can be most easily documented. However, while it may be feasible to use this doctrine to secure the use of the shoreline, its applicability for assuring access is questionable.

(2) ACQUISITION THROUGH EXERCISES OF THE POLICE POWER

The most common forms of police power regulation in the land use area, and those most appropriate and relevant to shoreline areas, are subdivision and zoning regulations. Private development of uplands along the coastline may often impair public shoreline access. A requirement that developers dedicate public easements for beach access where the subdivision would block

[3] State Ex Rel. Thornton V. 1 day 254, or 584,462 P. 2nd 67 (1969).

existing or potential access can be effectuated. Regulations can be drafted to require applicants to dedicate lands (and improvements) to public use as a condition of receiving development approval.

The rationale for requiring such dedications has been clearly upheld by most courts in the United States. The process and result of development creates demands on existing public facilities, or for new facilities, which should be satisfied in whole, or in part, by the developer. Although these requirements are usually applied in the context of parks, playgrounds, streets or drainage facilities and sometimes even schools, this rationale can be applied to providing public access to the shoreline as well. Indeed, whether the specific rationale is that the purchaser will benefit from the dedication (or improvements) as well as the general public, or that the development of the land will inevitably produce increased pressures on such resources or preclude public use thereof, the result is that reasonable public dedications can be required. This theory is most appropriate in the subdivision context where the process of subdivision clearly justifies and provides a rationale for such dedications. However, such dedications can also be required as part of a rezoning application, or grant of a conditional use or special exception permit.

Although there are advantages and disadvantages to such requirements, the advantages, particularly in the Virgin Islands, are so significant that dedication requirements could be the critical factor in insuring a successful beach (or shoreline) access program.

Another exercise of police power, and one currently utilized by the Virgin Islands government is vested in the Industrial Incentive Act (Title 29, Chapter 12). The Act provides for a tax exemption, the Act requires that the applicant who proposes to do business on land adjoining any beach or shoreline "agree to grant to the government of the Virgin Islands a perpetual easement upon or across such land to the beach or shoreline to provide free and unrestricted access to the public."

(3) ACQUISITION THROUGH EXPENDITURE OF PUBLIC FUNDS

Another means by which the public access can be provided to the shoreline is for the Virgin Islands government to acquire such access by fee simple purchase gifts. Such direct action, although usually requiring the expenditure of public funds, affords certain advantages that the other means discussed do not. For example, acquisition of access can be determined according to needs based on a variety of planning factors and criteria, and can be effected with less time or delay than would be involved in acquiring such access by judicial determination. Similarly, planned acquisitions could implement broader recreation programs or plans and could be planned and coordinated with the ongoing programs of other territorial agencies. Such acquisitions could be made in fee ownership or in lesser interests such as easements.

The Virgin Islands government may secure an easement (that is, a particular portion of the ownership rights) on beachfront land without assuming ownership. In this case, an easement would consist of the right of the public to cross the beach uplands, or a specified portion thereof, to reach the shoreline. Easements may be acquired by gift, negotiation, or condemnation.

Securing beach access easements assures the public or its right to use the shoreline, but allows the economic use of the uplands to remain in the private sector. In particular, it facilitates beach access in areas which are already developed. The concept of purchasing easements has been relatively untried in the Virgin Islands, and it is difficult to estimate costs in advance.

Purchase in fee simple would vest all ownership rights in the Territorial Government. This is the most expensive option for action and is efficient only where intensive use is anticipated and the ownership of the beach uplands would serve some useful public purpose. Where only moderate use and no further public facility development are intended, there is little point in increasing public holdings of economically unproductive land.

The Revised Organic Act of 1954 provides the Legislature with the authority to enact legislation providing for the condemnation of lands or interest in such lands for public purposes. There would be little doubt that a properly drawn statute that provided for condemnation of access easements to the shoreline would be constitutional. Furthermore, acquisitions pursuant to its authority, if undertaken in accordance with that statute and other applicable procedural requirements would be similarly valid.

Depending on the proposed scope of such an acquisition program, the major difficulty to implementing such an effort would be financing the costs of such land acquisition and management. Financial assistance in securing shoreline access is forthcoming from Section 313(2) of the CZMA Amendments, which authorizes grants for up to 50 percent of the cost of acquiring lands to provide access to public beaches and other public coastal areas of value. The Land and Water Conservation Fund, Bureau of Recreation, U.S. Department of the Interior; Community Development Block Grants, U.S. Department of Housing and Urban Renewal; and the Virgin Islands General Fund, among others can also provide sources of funding for land acquisition and management.

New Government Responsibilities

As hitherto unused beaches are made available to the public, the Government of the Virgin Islands will probably become responsible for several support services. These include maintenance/clean-up and public safety, including provisions for lifeguards.

As a part of this study, interviews were conducted with the maintenance supervisors at Magens Bay, the National Park Service on St. John, and the College of the Virgin Islands (Brewer's Bay Beach). The maintenance effort will depend on the intensity of beach use and the level of maintenance decided upon. It consists primarily of the removal and disposal of trash. The Magens Bay Authority requires a full-time crew of nine to maintain that heavily used beach at a moderate level. In season, a three-man National Park Service crew works full time on the maintenance of Trunk Bay, St. John, and receives some additional assistance from the lifeguards. Finally, the College of the Virgin Islands employs one maintenance worker full time at Brewer's Beach which receives consistent, frequent use. These examples overstate the possible obligation of the Territorial Government for each of those crews performs activities, e.g., cutting back brush, other than cleanup. It is unlikely that existing Department of Conservation crews will "stretch" to cover additional beach cleanup, especially as properties are acquired for the Territorial Park System. The formation and equipping of additional crews will require a budget of $100,000 - $150,000 per year.

The introduction of the mounted patrol has been highly effective in St. Thomas in protecting public safety on the beaches. The expansion of that program to the critical beaches would be most appropriate.

The Governmental liability in case of injury or death on newly opened beaches is unclear. The best and most expensive protection would be the provision of lifeguards. At a minimum, a warning will have to be posted at each beach.

Further Recommendations Concerning Public Shoreline Access and Use

Based upon the investigations conducted by the CZM staff and the Department of Conservation and Cultural Affairs, recommended policies and guidelines have been formulated for the development of this work element. These recommendations include:

1. Traditional public use of the shoreline should be guaranteed.

a. Development should be prevented from encroaching on public use areas not currently protected by the Open Shorelines Act. These areas include bluffs and other areas landward of the statutory definition of shoreline. The section of the Industrial Incentive Act which deals with public shoreline access and use should be strictly enforced.

b. In addition to maintaining access to the sea, maximum feasible opportunity for pedestrial access to the urbanized waterfront should be included in any development or alteration to the shoreline.

c. Public rights under implied dedication and customary use doctrines should be vigorously enforced.

d. The subdivision and zoning laws should be admended to require dedications of shoreline access.

e. Whenever possible, the purchase of access easements, rather than fee simple acquisition should be utilized.

2. The present beach inventory conducted by Conservation and Cultural Affairs should be further refined to include greater public impact.

3. The emerging Territorial Park System should be utilized to coordinate acquisition of coastal areas and manage their use by incorporating such areas into the Park System.

4. The territorial government should absorb the necessary costs of shoreline maintenance resulting from an increase in public access and use.

CHAPTER SEVEN
Areas of Particular Concern

The CZMA, while noting the importance of the entire coastal zone, declares that certain areas are of yet greater significance. As a prerequisite to program approval, the Act requires "an inventory and designation of areas of particular concern within the coastal zone" (Section 306(b)(3)). In addition, it is necessary that "the management program makes provision for procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological, or esthetic values" (Section 306(c)(9)).

The regulations further clarify the role of the areas of particular concern (APC):

> It should be noted that, geographic areas of particular concern are likely to encompass not only the more often cited areas of significant natural value or importance, but also, transitional or intensely developed areas where reclamation, restoration, public access, and other actions are especially needed: and those areas especially suited for intensive use or development. In addition, immediacy of need should be a major consideration in determining particular concern. (15 CFR 920.13)

CRITERIA FOR APC DESIGNATION

After consideration of the criteria suggested for APC designation by the regulations (15 CFR 923.13(a)), the Planning Office incorporated those that were relevant to the Virgin Islands and developed the following seven categories of areas that could be nominated as being of particular concern:

1. Significant Natural Areas - These are areas of unique, scarce, or fragile natural habitat or physical features; areas of high natural productivity; or essential habitat for living resources, endangered species including fish and wildlife and various levels of the food chain critical to their well being. Examples of significant areas are unique or remnant plant and animal species of special interest; natural areas that provide scientific and educational value; and areas necessary for nesting, spawning, rearing of young, or resting during migration. Also included are areas needed to protect, maintain, or replenish coastal lands and resources.
2. Culturally Important Areas - These are coastal lands and waters where sites of historic and archaeological significance, cultural or traditional value, or scenic importance are located.

3. Recreation Areas - Coastal lands and waters of substantial recreational value and/or opportunity. Examples include areas well suited for public parks, beaches, boat launching and mooring, and other recreational activities.
4. Prime Industrial and Commercial Areas - Those coastal lands and waters with existing or potential geologic and topographic amenability to industrial and/or commercial development, especially those requiring a waterfront location.
5. Developed Areas - Those urbanized or highly populated and intensively developed areas, where shoreline utilization and water uses are highly competitive or in conflict.
6. Hazard Areas - Coastal locations that, if developed, would pose a hazard because of periodic flooding, storms, erosion or land settlement.
7. Mineral Resources - Coastal areas with existing or potentially important mineral resources, particularly sand deposits for commercial extraction.

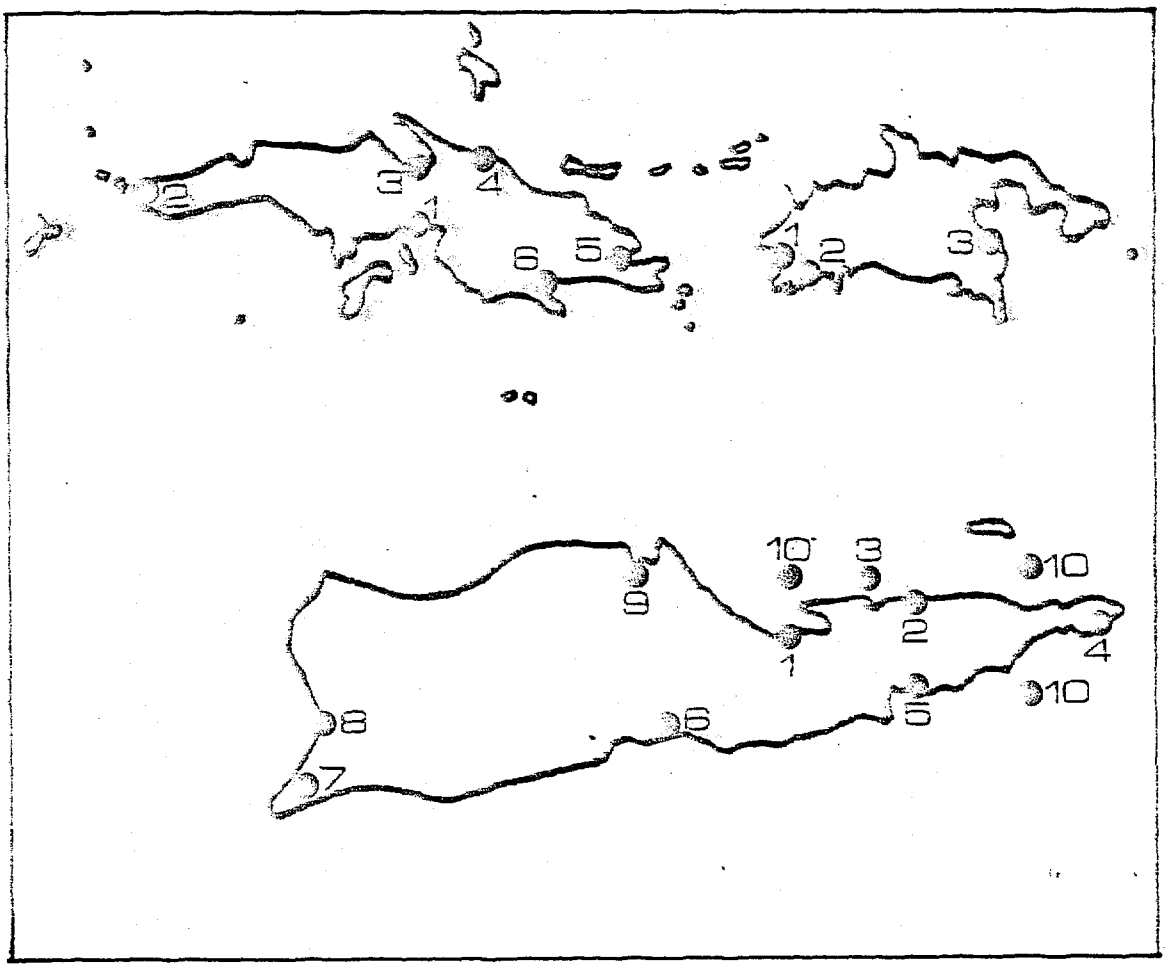
Two methods were utilized to identify potential APC's - staff determinations and public nominations. Initially, tentative designations were made by the coastal zone staff. APC designations were based upon the technical aspects of the program development including the land and marine inventories, the capability analysis, the results of the household survey and economic analysis, and the results of the newspaper survey, and consultation with Advisory Committees and Federal and Territorial Government personnel, particularly those from the V.I. Department of Conservation and Cultural Affairs and the U.S. Fish and Wildlife Service, U.S. Department of the Interior.

The second method of identifying potential APC's was a standardized form for public nomination. A copy of this form was distributed to Federal and Territorial agency personnel, legislators and citizens. Forms were also available at public libraries and at the administrator's office on each island. Each public nomination was reviewed by the coastal zone staff for compliance with criteria. The public nominations were encouraged to be accompanied by suggestions for recommended use, as well as a statement indicating problems associated with the area. A copy of this form is provided in Appendix D.

Based on an analysis of the information gathered by the above methods, the Virgin Islands Planning Office has designated nineteen land and water areas within the first tier of the coastal zone as areas of particular concern. These areas are identified both in 7.1 and on the attached Coastal Land and Water Use Plan maps. Section 905 of the Virgin Islands CZMA recognizes these designations.

FIGURE 7.1

AREAS OF PARTICULAR CONCERN



ST. THOMAS

1. St. Thomas Harbor and Waterfront
2. Botany Bay (APR)
3. Magens Bay and Watershed
4. Mandahl Bay (APR)
5. Vessup Bay - East End
6. Mangrove Lagoon - Benner Bay (APR)

ST. JOHN

1. Enighed Pond - Cruz Bay
2. Chocolate Hole - Great Cruz Bay (APR)
3. Lagoon Point - Coral Harbor (APR)

ST. CROIX

1. Christiansted Waterfront
2. Southgate Pond - Cheney Bay (APR)
3. Green Cay (APR)
4. Isaac Bay - East End (APR)
5. Great Salt Pond Bay (APR)
6. Southshore Industrial Area
7. Sandy Point
8. Frederiksted Waterfront
9. Salt River - Sugar Bay (APR)
10. St. Croix Coral Reef System (APR)

AREAS FOR PRESERVATION AND RESTORATION

While Section 306(c)(9) of the CZMA requires only that state management programs contain provisions for procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological, or esthetic values, the Virgin Islands Planning Office has, in fact, designated eleven of those areas designated as APC's as areas for restoration and preservation (APR's). Those areas designated as APR's are also listed in figure 7.1. As in the case with APC's, Section 905 of the Virgin Islands CZMA recognizes the designations of these areas as APR's. The Virgin Islands CZMA also provides the means whereby additional areas may be designated as either APC's or APR's. Section 909(b) of the Virgin Islands CZMA gives the Virgin Islands Planning Office the authority to make such future designations as may be required.

Site Specific Recommendations

Guidance as to the management of both APC's and APR's is provided by the coastal zone management policies contained in section 905 of the Virgin Islands CZMA and the Coastal Land and Water Use Plan (CLWUP) as adopted by the Virgin Islands CZMA. Section 905 specifically mandates that all development within the first tier of the coastal zone, which includes all APC's and APR's, must be consistent with the policies in that section. Section 905 also states that the Commissioner of Conservation and Cultural Affairs, in applying the coastal management policies of section 905 of the Virgin Islands CZMA to proposed development within the first tier, shall to the extent feasible, assure that such development is carried out at the location and in a manner that is consistent with the provisions of the CLWUP. It should be noted that CLWUP provides very detailed guidance concerning the uses and activities that should be allowed in each land and water use category.

Additional guidance is also provided to the Commissioner for the purposes of managing APC's in the form of site specific recommendations which have been developed by the Planning Office for each APC. These specific recommendations are an outgrowth of the coastal zone planning process and represent a synthesis of many diverse considerations. In most cases the recommendations reflect a refinement of the policies and use recommendations developed in the "Permissible Land and Water Uses" section.

Areas presently designated as APC's will continue to receive more detailed attention and special consideration during the planning process that VIPO will undertake in order to amend the Virgin Islands Zoning and Subdivision Law, so as to reflect the provisions of the CLWUP. As mandated by the Virgin Islands CZMA, the Virgin Islands Zoning and Subdivision Law shall be amended within one year of the effective date of the Virgin Islands CZMA.

ST. CROIX

(1) CHRISTIANSTED WATERFRONT

a) Fort Christiansvaern to Vicinity of Antilles Airboats. Christiansted is the largest urban area on St. Croix and is also an important commercial center. Most of the town itself is included in the historic district and several notable landmarks are situated along the waterfront. The Christiansted National Historic Site includes Fort Christiansvaern, the Scalehouse and surrounding areas, and Government House.

Numerous hotels and tourist related shops are located in the downtown area. The development pattern along the waterfront has resulted in poor lateral access to many areas of the shoreline. Waterfront access is primarily by means of numerous small alley-ways which lead directly to the shore with lateral movement hindered or even blocked by buildings or fences. There are several small finger piers along the waterfront and the harbor is heavily used for small boat anchorage.

Downtown vehicular congestion and lack of adequate parking space are serious problems in the area and are impediments to waterfront redevelopment. The removal of heavy cargo traffic associated with the Gallows Bay Port may decrease this traffic congestion somewhat. At present, much of the last remaining open space in the downtown waterfront is used for parking. This shoreline parking area, surrounding the Scalehouse and adjacent to Hamilton Jackson Park, restricts pedestrial movement and is incompatible with the scenic character of the National Historic Site. Several alternate parking schemes and sites have been suggested as possible remedies to this and other parking problems in the downtown area.

Water quality in Christiansted Harbor has been degraded by numerous dredging activities, urban runoff, and sewage discharges. The well-developed reef system which defines the harbor is apparently recovering from the turbidity caused by recent dredging operations. All untreated sewage discharges into the adjacent coastal waters will cease upon completion of interceptor lines

next year. It is probable that the 16 foot controlling depth for the harbor should be adequate to meet the draft requirements for the islands' trading vessels and pleasure crafts. The construction of the new Southport facilities should help eliminate the need for further increasing the depth of the harbor.

Protestant Cay, located just 500 feet offshore of Fort Christiansvaern is an important element of Christiansted Harbor. Although the cay is only 5 acres in size, it adds significant visual interest to the view from the Christiansted Waterfront. The government of the Virgin Islands owns Protestant Cay. A private company holds the lease and operates a resort hotel on the cay. Ferry service is provided for a fee between Christiansted and the hotel on the cay. An endangered species of lizard, Ameiva polops is found only on Protestant Cay and Green Cay.

Recommendations: It is recommended that pedestrian access to the downtown area be improved by constructing a pedestrian walk-way along the waterfront. Safe, continuous lateral movement should be provided by extending and improving the existing broadwalk westward to the limits of existing waterfront commercial development. Existing parking areas along the waterfront near the Scalehouse should be relocated to insure that the integrity of the Historic Site is maintained and that safe and adequate access to the entire waterfront is available. Any maintenance dredging which may be required should be undertaken only after careful study. In order to protect the remaining habitat for the endangered wildlife and to maintain the scenic quality of the waterfront, it is recommended that no further development activities be permitted on Protestant Cay.

(b) FORT LOUISE AUGUSTA - ALTONA LAGOON - GALLOWS BAY

This area is just east of the Christiansted downtown, extending from Fort Christiansvaern westward to the vicinity of Fort Louise Augusta. It includes the Gallows Bay Port and marina facilities and the filled land adjacent to the Altona Lagoon.

Presently, most of the maritime commerce for St. Croix is handled by the limited Port Authority facilities at Gallows Bay. There is also substantial traffic in small inter-island vessels and local fishing boats. Cargo movement to and from this area contributes to severe traffic congestion in Christiansted. Presently, the size of vessels entering Christiansted is limited by the channel depth of 16 feet; however, the new Southport facilities will enable all shipping activity, with the exception of the small traditional traders, to relocate out of the Gallows Bay area. This area contains Christiansted's only marina and has traditionally been used for small boat mooring and repair.

Altona Lagoon is connected to the sea by a small channel located just east of the Gallows Bay marina. This Lagoon is fringed by healthy mangroves, providing significant habitat for birds and mangrove oysters; however, drainage and circulation for the lagoon is poor as a result of frequent

obstructions in this narrow channel. Altona Beach, the filled land adjacent to the lagoon, has been partially developed for recreation; however, it does not receive heavy use except for special holidays and large scale gatherings.

Recommendations: It is recommended that the Gallows Bay area be redeveloped for recreational boating upon completion of the new Southport. New or expanded marina sites should be developed within this area. All heavy cargo operations should be relocated to the new Southport location. Adequate facilities for the small inter-island trading vessels should be maintained.

The southshore of Altona Lagoon should be an area for preservation and restoration. The remaining perimeter of the pond should be devoted to conservation, recreation, and traditional use. It is recommended that the lagoon itself retain its function as a scenic and wildlife area. The drainage of Altona Lagoon should be restored by improving water flow from the lagoon to the bay.

(c) WESTERN CHRISTIANSTED HARBOR

This large area of undeveloped filled land extends westwards from the Antilles Airboat facilities to the V.I. Water and Power Authority Plant. Much of the adjacent inland area is occupied by Housing Authority developments including JFK Terrace, DeChabert, and Water Gut Homes. The Department of Conservation and Cultural Affairs has recently completed preliminary plans for "Christiansted West Waterfront Part," a large recreation complex for this area. At present, there are few recreational facilities available for nearby residents. The plans include extensive land and water recreation facilities, including a bicycle path, pedestrian boardwalk, swimming and boating, tennis courts and play fields.

Recommendations: It is recommended that the development of this area for recreational use be undertaken as expeditiously as possible. The CZM program endorses the preliminary plans for the area which have been developed by the Department of Conservation and Cultural Affairs.

(2) SOUTHGATE POND - CHENEY BAY

Southgate Pond has been divided by fill to form two separate ponds. The western portion has been opened to the sea and is the site of a limited boat anchorage. The eastern, larger pond is still an important wildlife, scenic, and educational area. Cheney Bay Beach is located between the sea and the eastern pond. Fine views of Green Cay can be experienced from the entire area. A hotel-condominium development is located adjacent to the opened western pond. Because of its proximity to Christiansted, Cheney Bay Beach has some potential for public recreational use.

Recommendations: The eastern portion of the former Southgate pond should be preserved as a wildlife-educational area. Public access to the Cheney Bay Beach should be secured. The impacts of having opened the western portion of the pond should be investigated. If no severe impacts are found, the western portion of the pond could be devoted to a protected anchorage for recreational boating.

(3) GREEN CAY

St. Croix has only four offshore cays: Buck Island, where the National Park Service underwater park is located, Protestant Cay in Christiansted Harbor which is already developed, the dredge spoils island in the Hess Harbor, and Green Cay. Green Cay is significant for the following reasons:

1. Important species of sea birds, including the endangered Brown Pelican, find mongoose free nesting habitat here.
2. Located only 1/4 mile offshore, this cay serves as a favorite picnicking and recreation area for many St. Croix residents.
3. The endangered species of lizard Ameiva polops, is found here.
4. The visual quality of the view from shore to sea of northeast St. Croix is enhanced by the cay in its present use.
5. This cay was a major nesting ground for white pigeons.

Recommendations: Green Cay should remain in its present undeveloped state. The inclusion into the Territorial Park System would protect this important resource. The report "Potential National Natural Landmarks" strongly recommends that Green Cay be entered into the Registry of Natural Landmarks. The CZM Program concurs with this recommendation.

(4) ISSAC BAY - EAST END

The extent of this APC includes all the land east of a line drawn from Isaac Point northeast to Cotton-Garden Point. This area is the driest environment on St. Croix, and as such, includes a fine example of the thorn-scrub ecosystem. East End Point, the easternmost point of the Virgin Islands, is an excellent example of dwarf vegetation due to salt spray and wind shear. The ecology of this area, because of its dryness and proximity to the wind and salt spray from the sea, is extremely sensitive to disruption. Isaac Bay Beach and coral reef system is considered one of the best snorkeling spots in the Virgin Islands. The entire Isaac Bay-East End area is presently owned by the Virgin Islands government or Fairleigh Dickinson.

Recommendations: Isaac Bay - East End should remain in its present undeveloped state. Inclusion of this area into the Territorial Park System would be the best means to preserve this wild scenic area.

(5) GREAT SALT POND AND BAY

Great Pond is the second largest salt pond in the Virgin Islands with black mangroves rimming most of the pond. In addition to serving as a large sediment trap between upland and Great Pond Bay, Great Pond is a significant wildlife area. Offshore is a barrier reef/turtle grass meadow system. The close proximity of these three natural systems makes the Great Salt Pond and Bay a unique natural area.

Recommendations: The Great Salt Pond and Bay area should be preserved as a wildlife, educational, and natural area.

(6) SOUTHSHORE INDUSTRIAL AREA

The industrial area extends from Canegarden Bay, the site of a planned petroleum refinery, to Manning Bay, just south of the Hamilton Airport. The shoreline and adjacent inland areas here are among the most heavily developed coastal areas in the Virgin Islands. Massive dredge and fill activities have occurred throughout most of this area. These developments include:

a) Virgin Islands Refinery Corporation (VIRCO) - All local and Federal permits have been approved for a 200,000 barrel per day refinery on a 300 acre site on Canegarden Bay. A submarine pipeline extending two miles offshore to a marine platform terminal is included in the project. No construction activity has yet begun.

b) Hess Oil Virgin Islands Corporation (HOVIC) - The 750,000 barrel per day refinery here is one of the largest in the world. The Hess Port facilities are extensive and are large enough to accommodate all conventional oil tankers. Very large Crude Carriers (VLCC's tankers larger than 200,000 DWT) use the port only after being lightered offshore near Fredericksted. A local permit for the construction of a crude oil terminal and submarine pipeline 2 miles offshore has been issued; however, Corps of Engineers approval is pending. The VLCC's would be unloaded at this offshore terminal, thus foregoing the need for lightering the tankers.

New public port facilities are being constructed by HOVIC between the existing Hess and Martin Marietta ports. This project will require some dredging between these two existing channels. Project approval by the Army Corps of Engineers is also pending.

c) Martin Marietta Alumina Plant - The Martin Marietta processing operation occupies much of the former Krause Lagoon. This area has been altered extensively by dredging and filling. The company also maintains excellent port facilities here. A large dredge-spoil

island is located just offshore from the entrance to the Martin Marietta channel. Some fringe mangrove areas remain at the southern edge of the property.

d) Water and Power Authority Plant - The Virgin Islands Water and Power Authority has recently constructed a 35,000 KW generating plant just east of the Martin Marietta channel opening. Because of less demand, this plant was never brought on line and there are no plans to use this facility in the near future. The Authority is presently attempting to sell the entire plant.

e) St. Croix Landfill - The Department of Public Works operates a sanitary landfill just west of the Martin Marietta property. The new landfill is located inland just north of the previously used coastal site. A government abatoir is also situated nearby.

f) Wastewater Treatment Plant - A large wastewater treatment plant with ocean outfall is located near the sanitary landfill. Ultimately, almost all wastewater flows from Christiansted, Frederiksted, and central St. Croix will be treated at this plant.

g) Manning Bay Racetrack - The racetrack is located west of the landfill and wastewater treatment plant. The track is just south of the airport and occupies much of a large parcel of government land which extends from the airport south to Manning Bay.

There are numerous potential adverse environmental impacts associated with the entire south shore industrial area. The foremost problem among these is the potential for large scale oil spills along the entire south shore. The quantity of petroleum products which are presently being transported, loaded, and unloaded in the area from Hess west to Frederiksted is immense. Regardless of the safety precautions which are taken, an element of risk is always present for these operations. An additional refinery will only add to these risks. Other adverse impacts include degradation of water quality which results from the massive alteration of drainage patterns, both in the immediate area of development and also run-off problems associated with upland developments. Another potential water problem for the area is that of waste discharge including chemical and thermal wastes from the industrial plants, the sewage treatment plant, and the solid waste disposal site.

Recommendations: It is recommended that special procedures be established for monitoring the environmental impacts, especially water and air quality impacts associated with the south shore industrial area. Therefore, future development should be in close coordination with the EPA. Oil Spill contingency plans should be formulated and reviewed regularly for adequacy. Any future dredging activity, such as that between the Hess and Martin Marietta channel or the dredging and backfilling necessary for the proposed submarine pipelines, should be carefully monitored to insure that undue damage does not occur. Mangrove restoration should be undertaken along the southern boundary of the Martin Marietta site.

(7) SANDY POINT

Sandy Point is a peninsula of approximately 500 acres at the southwest tip of St. Croix. A large salt pond is located within Sandy Point. This APC is the largest sand beach-salt pond system in the U.S. Virgin Islands. Sandy Point contains the longest stretches of beach in the U.S. Virgin Islands. Important onshore and offshore sand deposits are also found and endangered species of sea turtles sometimes nest on the beaches. The unusual algal mats of the Salt Pond and the exposures of beach rock are of significant educational value.

Recommendations: The important recreation, scenic, and wildlife value of Sandy Point and the West End Salt Pond need protection. Therefore, this area should be managed for conservation, recreation and traditional uses.

(8) FREDERIKSTED

The town of Frederiksted has been declining in importance as a commercial center for several years. Although some limited cruise ship facilities are available, relatively few cruise ship calls are made in the town. One large finger pier is presently in use for passenger and cargo operations; however, it can be expected that all cargo activities will be moved to the new Southport upon its completion. The pier area is often used for snorkeling and diving and is reportedly the only site in the Virgin Islands where seahorses may be observed. The downtown waterfront area is not heavily used and most of the shoreline here is occupied by area and Fort Frederik, a National Historic Site. In addition, much of the town itself is included in the Historic District. A Virgin Islands Port Authority Study "Plans for Seaport Development and Relocation" (Madigan-Praeger, 1974) includes proposals designed to revitalize the Frederiksted Waterfront including expanded tourist oriented facilities and downtown redevelopment.

Recommendations: The CZMP endorses the major proposals for Frederiksted as outlined in the 1974 Port Authority Study "Plans for Seaport Development and Relocation." It is recommended that a revitalization plan for Frederiksted include the following elements:

(a) Active encouragement of cruise ships to visit Frederiksted, repairs and improvements to the existing pier, construction of a visitor center plus other waterfront amenities for both visitors and residents;

(b) Development and improvements of Frederiksted beach and the waterfront park with special emphasis upon the integration of historical areas especially (Fort Frederik) into the shoreline park areas; and

(c) Relocation of all cargo shipping to the Southport with any future marina construction encouraged to locate adjacent to the cruise ship area.

(9) SALT RIVER - SUGAR BAY

Salt River represents one of the last remaining major mangrove stands in the U.S. Virgin Islands and is the largest in St. Croix. The entire area is valuable as both a cultural and environmental resource. Upper Salt River is an archaeological site on the National Register. The National Historic Site commemorating the landing of Columbus in 1493 is located within this area. This area is an important bird sanctuary as well as refuge for deer and other wildlife.

Offshore is a well developed reef system and a deep submarine canyon. During storms and hurricanes the bay offers a protected anchorage.

Recommendations: The Salt River-Sugar Bay area should be utilized for preservation and conservation. Inclusion of this area in the Territorial Park System is recommended.

(10) ST. CROIX CORAL REEF SYSTEM

The best example of coral reefs in the U.S. Virgin Islands is found offshore of St. Croix. These coral reefs provide spectacular opportunities for underwater recreation and are areas of high marine productivity. The Bank Barrier reefs which extend along the entire northeastern and southeastern coasts are the most extensive and most developed of all the St. Croix reefs and, as such, deserve special management. Fine examples of algal ridges can also be found within this area of particular concern. Algal ridges are important sources of nutrients to coastal waters. Clear water that enables maximum penetration of solar energy is essential for the development of algal ridges. The coral reef area of particular concern, which extends from Long Reef in Christiansted Harbor, includes the non-Federal areas of Buck Island Reef, Boiler Bay Reefs, and the Southeastern Reefs from East point to Great Pond Bay, including the well developed algal ridges of the southeast shore.

Recommendations: This portion of the St. Croix coral reef system should be preserved as an underwater park and placed in the Territorial Park System.

ST. THOMAS

(1) CHARLOTTE AMALIE HARBOR AND WATERFRONT

a) WEST INDIAN COMPANY AND VICINITY

The Long Bay area in the vicinity of the West Indian Company docks is one of the most heavily used areas of the St. Thomas waterfront. The company properties include the best equipped and most extensive passenger and cargo handling facilities in the Virgin

Islands. The docks provide complete service for cruise ships, cargo vessels, fuel tankers and an occasional military vessel. A large marina and numerous small boat moorings are located adjacent to the dock area.

Because of the great number of cruise ships which normally call at St. Thomas, the company docks frequently are unable to accommodate all of the vessels requiring services. There is only one additional cruise ship docking space available in St. Thomas (the Port Authority Sub-Base pier). If docking space is not available, cruise vessels anchor in the harbor and transfer passengers to the waterfront by launch. In addition, several of the larger cruise ships are forced to anchor in the outer harbor because of the insufficient depth alongside the docks.

The marina adjacent to the West Indian Company docks is large and well-equipped for both sailing vessels and large power boats. A resort hotel with gift shops, restaurant, and night club is located near the marina operation. A number of vessels at the marina and adjacent mooring sites serve as permanent live-in facilities.

The bay itself is heavily stressed, primarily from urban runoff and bottom disturbances caused by heavy propeller wash. Turbidity levels are frequently very high, and marine productivity is low. The West Indian Company has expressed interest in expansion of their facilities. A Memorandum of Understanding was executed in 1972 between the U.S. Department of the Interior, the Virgin Islands Government, the West Indian Company and others. The Memorandum affirms the treaty rights of the West Indian Company to dredge and fill specific areas of the harbor. In 1975 the Memorandum was amended to transfer the rights and obligations of the Department of the Interior to the Virgin Islands Government. Under the terms of the Memorandum a total of 29 acres may be filled in the vicinity of Frederiksberg Point, Long Bay Beach and Havensight Point. The fill material will be taken from Long Bay and Gordon Bay. The proposed project will provide new berthing spaces for cargo and cruise vessels and new land for waterfront, commercial and recreation facilities. About 2.5 acres of filled land would be transferred from the West Indian Company to the Virgin Islands Government for recreation uses.

Recommendations: It is recommended that any dredge and fill activities which may be undertaken by the West Indian Company be carried out in a manner which will minimize long-term adverse impacts to the water quality of the harbor. It is recommended that close coordination between the Company and the coastal zone management agency be maintained in order to insure that all future development activity will be consistent to the maximum extent feasible with the coastal zone management plan.

b) LONG BAY AND DOWNTOWN WATERFRONT

The waterfront area which extends from Pearson Gardens to the inter-island ferry and airboat facilities near Frenchtown is used primarily for recreation and traditional commerce. This area also includes Veteran's Drive, the principal land transportation route for the island. Traditionally, the beach area near Pearson Gardens and the docking facilities near the Legislature Building have been used by the local fishermen for mooring and boat repair. The small island trading vessels are the principal users of the bulkheaded area along the downtown waterfront. These activities play an important role in the day-to-day commercial and cultural life of the islands. The bulkheaded area also receives considerable use by private yachts and tour boats. Because of traffic congestion, continued safe public access to the waterfront is threatened. Both residents and visitors often experience difficulty in crossing Veteran's Drive in order to reach the glass bottom boats, island trading vessels and other waterfront markets.

Recommendations: Future development activity east of the Frederiksberg Point and extending to the vicinity of the Antilles Airboats operation should be restricted to maintain this area in its present use. Any shoreline alterations for this area should be minimal. The native fishing boat uses, recreation uses and traditional waterfront commerce activities should be protected from encroachment by other uses. Any public service facilities for this shoreline area, including land transportation, public buildings, utilities, or public recreation, should be designed in such a way that the public's physical and visual access to the waterfront is enhanced, not hindered. Safety measures such as crosswalks should be utilized to insure safe and adequate access to the waterfront.

c) FRENCHTOWN AND VICINITY

The waterfront area from the inter-island ferry and U.S. Customs facilities to Frenchtown is used for transportation services, traditional fishing and boating activities, and for marina facilities. Most of the available shoreline is presently developed. In addition, the marine areas receive very heavy use and are stressed by considerable runoff from upland areas. The marina area here is often congested. The narrow channel at Haulover Cut represents a potential safety hazard to both boat traffic and incoming airboats.

Recommendations: It is recommended that the waterfront area of Frenchtown and vicinity be maintained in its present use. Continued attention to congestion and safety problems in the marine area is warranted.

d) CROWN BAY

The Crown Bay area, extending from the sand-fill near Aspinall School to the former submarine base piers, is among the most heavily developed areas of the St. Thomas waterfront. The shoreline uses in this area range from container ship facilities to derelict ship and auto dumping. The sand-fill area south of Wayne Aspinall School receives heavy use from shallow draft container vessels and bulk carriers and also serves as a beaching area for local fishermen. Sub-base activities include warehousing, restaurants, a small marina with dry storage, government motor pool, auto and boat repair shops, and office buildings. One of the Port Authority Sub Base piers provides docking space for one large vessel and is the only facility of its type available on St. Thomas other than those of the West Indian Company. The pier is used mainly for cruise ship docking and fuel tanker unloading. Remnants of other piers are present; however, for the most part, these ancient wooden piers are in dangerous disrepair and seldom used. In addition to the highly developed shoreline, most other areas of the former naval base are presently occupied by private concerns which lease from the Government.

This area represents the greatest potential site for industrial and commercial development of the Island of St. Thomas. This is a suitable site for future expansion of public cargo and passenger handling facilities. Presently the entire area is adversely affected by traffic congestion, inadequate public services, refuse dumping and general disrepair and poor management of existing facilities. The future needs of St. Thomas for passenger and cargo handling and industrial and commercial space will almost certainly require the redevelopment of this area. Because of the limited areas available for this type of development, it is probable that competition for Crown Bay locations will become much more intense over time.

The Port Authority has recently completed a detailed study outlining possible redevelopment options for the Crown Bay area. Three alternative bulkhead configurations have been suggested calling for filled areas of between 29 and 59 acres. The Plans include proposals for cargo, passenger, retail, and commercial facilities. A 60 boat marina is included in the plans as a possible option. The principal uses for the new facilities would be for cargo handling and cruise ship-oriented activities. Considerable dredging in Crown Bay and immediate off-shore areas would be required for the proposed project.

Recommendations: It is recommended that the general Crown Bay redevelopment plan suggested by the Port Authority be endorsed. Specific configurations and facility plans for the filled lands should be decided upon after consultations with the coastal zone management agency, the Port Authority, and the Department of Commerce. The marina facility should be included in the Crown Bay redevelopment with additional attention given to the need for a larger facility than that outlined in the Port Authority plan.

e) KRUM BAY

The Water and Power Authority electric generation and desalinization plants occupy much of the Krum Bay shoreline. Bulk materials such as sand and fuel are also unloaded and stored here. The Authority's sea water intake pipes are located just offshore. All of the available shoreline is presently developed and much of the surrounding hillside is used for fuel and water storage tanks.

Recommendations: It is recommended that this area be maintained for heavy industrial activities such as those which presently operate here. The quality of the water in the bay which is processed by the desalinization plants should be protected from industrial pollution.

f) HASSEL ISLAND

Hassel Island is a small offshore island (139 acres) which is a resource of historic, recreational, and scenic value. Because of its close proximity to Charlotte Amalie (150 feet across Haulover Cut), Hassel Island's development potential is high. Presently the island serves to preserve the visual integrity of St. Thomas Harbor. The maintenance of Hassel Island in its present state is essential to the preservation and enhancement of the visual quality and character of the harbor. The southernmost third of the island (48 acres) is already a Historic District on the National Register of Historic Places.

Recommendations: Hassel Island should be preserved in its present state. The best use of the island is as a historic park, recreation area and nature study area. It is further recommended that the entire island be considered for possible inclusion in the Territorial Park System.

g) WATER ISLAND

Water Island, southwest of the entrance to St. Thomas Harbor, is the fourth largest island in the Territory (500 acres). The island is Federally owned and, as such, is an "excluded Federal land," not subject to provisions of the Virgin Islands CZMP.

Based upon the findings of the Federal consultation-coordination element of the program, it does not appear that the island includes any resources or uses of "national interest," nor is there any existing or proposed "national defense" use for the area. The island is presently under a long-term lease to a private corporation. Scattered development has occurred including hotels and private homes. The primary use is for estate type residential development. Because of the island's size and location, it is likely that any development activity there will have a direct impact on the coastal zone.

Recommendations: Based upon the finding that Water Island development does not involve the "national interest," and the finding that direct impacts may occur, it is recommended that Water Island be developed in a manner consistent with the CZM Land and Water Use Plan and policies.

(2) ESTATE BOTANY BAY

The area is located at the western end of St. Thomas and includes the marine resources of Botany and Sandy Bays.

Within the 400 acres of Estate Botany Bay are an unusual combination of historic, natural, recreation and scenic resources. An archaeological district with the remains of an Arawak village and the historic mill and sugar factory have been placed on the National Register of Historic Places. A wildlife sanctuary and arboretum are additional features of note within the site. The marine life of Botany Bay and Sandy Bay is particularly rich with good examples of sponges, corals, and fish. At present, Estate Botany Bay is privately owned. The Estate and associated marine resources have been recommended as a "national natural landmark."

Recommendations: It is strongly recommended that Estate Botany Bay, including the offshore reefs, be included in the Territorial Park system. The archaelogic and historic sites should be protected from degradation and serve as an outdoor classroom for students. The basic natural character of both the terrestrial and marine portions of this site should be protected.

(3) MAGENS BAY

Magens Bay is the most distinctive coastal feature on the north shore of St. Thomas. As one of the largest bays in the Virgin Islands - 4,000 feet wide and over two miles long - it is also one of the most significant recreation resources of St. Thomas. The entire viewshed is one of the most scenic in the Virgin Islands.

Beyond the beach itself, the area is a concentration of several resources that make the entire watershed one of the highest value resource areas in the islands. The archaeological site is on the National Register of Historic Places. This site is of considerable cultural and educational value to the people of the Islands. An arboretum of extensive tropical flora also exists behind the beach area.

Almost any place leaves an "image" with its inhabitants and visitors. The "image" of St. Thomas for many people is summed up by the view of Magens Bay from the observation points at Mountain Top and Drake's Seat. Therefore, as the many factors outlined indicate, Magens Bay is a resource worthy of special management.

Recommendations: Viewshed/Watershed Management - The viewshed (the area of Lerkenlund, Misgunst, Canaan, Lovelund and Peterborg Peninsula) from Drake's Seat seaward should receive careful management. The view should be protected and enhanced. Watershed management of this area is needed to protect Magens Bay, the beach, and the archaeological sites. Upland development should be held at a minimum, and conducted in a manner that will prevent erosion of the hillsides and subsequent siltation and sedimentation of the Bay.

Improvement of Public Access to the Beach and Park - Magens is difficult to reach without a car. Public bus service, especially on weekends, should be developed from Charlotte Amalie and Estate Tutu.

Arboretum Restoration - The coconut grove and entire arboretum area should be restored and managed.

(4) MANDAHL BAY

The salt pond at Mandahl Bay was opened as part of a plan to develop the Bay as a marina and Hans Lollick Island as a resort. The project development was abandoned, leaving a massive rip rap breakwater at the opening to the proposed mooring and docking areas and some site preparation. Winter swells, high energy wave action, dangerous sailing, and inaccessible location preclude the future use of this area as a marina.

At the present time, the site is functioning as an excellent wildlife area. Sea birds and fish are very common. Possibilities for restoration have been positively assessed by the U.S. Fish and Wildlife Service. The site is presently owned by the government of the Virgin Islands.

Recommendations: The recommended use for the area is as a wildlife and scenic park. Accessibility should not be significantly improved. While it is not feasible to restore the salt pond to its original condition, a "lagoon" may be created by replanting and restoring damaged vegetation.

(5) VESSUP BAY - EAST END

The future development of Vessup Bay, Red Hook and eastern St. Thomas are interrelated. Vessup Bay functions as the focal point of the entire east end of the island. Commercial development, such as the new Red Hook shopping center, numerous marina developments, Eudora Kean High School, and the Red Hook-Cruz Bay ferry dock all are located in or adjacent to Vessup Bay. Many hotels and condominiums are also located on the east end of St. Thomas.

Because of its proximity to the excellent sailing areas of St. John, the British Virgin Islands, and Sir Francis Drake's Passage, Vessup Bay is the site of intense boating activity. As a result the bay is quickly becoming overcrowded. The marinas are filled to capacity and the mooring of sailing vessels utilizes a substantial portion of the deeper water of the bay. The Red Hook-Cruz Bay ferry dock on the north side of the bay, and the National Park service dock on the south side, add significantly to the heavy use of Vessup Bay. The concomitant problems of safety, lowered water quality, and lowered visual quality are evident.

Recommendations: The expansion of boating facilities at Vessup Bay should be encouraged. The salt pond adjacent to the ferry dock should be utilized as the site for future expansion of marine terminal and associated facilities.

(6) JERSEY BAY: MANGROVE LAGOON/BENNER BAY

Mangrove Lagoon/Benner Bay comprise a complex section of the coastal zone of southeast St. Thomas. The Mangrove Lagoon is the last stand of Mangrove ecosystem on the island. The Department of Conservation and Cultural Affairs has recently completed plans for a large wastewater treatment facility in the Mangrove Lagoon area. This treatment plant and its associated interceptors will eventually serve most of the Turpentine Run drainage basin. A final decision on plant and ocean outfall location has not yet been made. Benner Bay, directly east of the Lagoon, is an area of very important marina activity. The basic problem is to reconcile and harmonize the apparently conflicting goals of protecting a healthy mangrove ecosystem and encouraging the existence of the vital marina industry of Benner Bay.

The demand for docking facilities has, in part, encouraged piecemeal illegal destruction of sections of the mangrove fringe. Mangroves are hacked away, and fill added to create small private docks and peirs. Where the water is shallow, propeller backwash (blow-out) is utilized to dredge the bottom. Some of these illegal users cannot find adequate docking

space, some cannot bear the financial cost, and others merely take advantage of the present inadequate enforcement system.

Recommendations: The overall policy for Jersey Bay should be one in which the mangrove area receives either protection or restoration with limited marina expansion.

All of the management guidelines and recommendations set forth in the "Permissible Land and Water Uses" section of Chapter Five should be stringently enforced in the Mangrove Lagoon area (for more detailed information, See VICZM, Marine Environments, 1977).

A portion of the Mangrove Lagoon area should be preserved. The proposed boundary of the mangrove preservation zone is as follows:

> A line from the coastal road through parcel number one, to the northeast point of Bovoni Cay shall divide the mangrove preservation zone from the area of permitted marina development. Land to the wast of this line will be within the mangrove preservation zone (this boundary approximates the line dividing the present W-1 zone from P zone on the zoning map).[1]
>
> The preservation zone should extend west to Long Point. A second preservation zone should consist of an area from Compass Point north to the existing marina.

A program of mangrove restoration should be initiated for the old race track area near the lagoon, and for the former lagoon area between Antilles Yachting and Compass Point Road.

The area of Benner Bay east from the preservation boundary to Compass Point should be an area where marina development is permitted if it is consistent with the provisions for the protection or restoration of mangroves. Limited dredging of Benner Bay should be permitted contingent upon an environmental impact assessment. Ancillary marina facilities (e.g., parking, boat cleaning, solid waste disposal, fueling) has had significant impact on the water quality of the entire bay. Therefore, careful attention should be given to the impacts of fueling, runoff, and other related activities. A public dock should be constructed and marina owners should be encouraged to construct public facilities in return for various tax concessions. Those who moor boats within the preservation area, and who cannot afford commercial docking space, should be given first priority in relocating to any new public docks.

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[1] A similar proposal for a preservation zone is advocated by Grigg, van Eepoel, and Brody in "Water Quality and Environmental Status of Benner Bay-Mangrove Lagoon," Water Pollution Report No. 10, Caribbean Research Institute, April 1971.

Watershed management of Turpentine Run gut and other water courses is needed to protect the water quality of both the Lagoon and Benner Bay.

ST. JOHN

(1) ENIGHED POND - CRUZ BAY

Cruz Bay is the major residential center and port of entry for St. John. A recent Port Authority study includes several proposals for the Enighed Pond-Cruz Bay area. The major porposals included in this Master Plan are:

a) to improve and develop Enighed Pond to include a marina, dry boat storage, charter boat storage, charter boat dock, a cargo area with storage facilities for bulk materials, and a park and recreation area;

b) to improve and develop Cruz Bay Beach to its fullest potential as a bathing beach and park;

c) to utilize the Port Authority ferry dock for passenger operations only; and

d) to improve and develop Little Cruz Bay (Creek Area) for light cargo, boat repair, and for foreign arrivals while clearing customs.

Recommendations: In addition to these activities, a wastewater treatment facility is planned for the Enighed Pond area. It is recommended that the general concepts of the proposed master plan suggested by the Port Authority be enforced Plans for the wastewater treatment plant should be reviewed to insure that this activity will not interfere with future development. It is also recommended that ferry boat docking be relocated to Little Cruz Bay (Creek Area). This measure would enable the water quality in Cruz Bay to improve and in turn make Cruz Bay Beach a more viable recreation resource. In addition, the area surrounding Little Cruz Bay can better accommodate taxis and tour buses.

All detailed site plans should be subject to review by the coastal zone management agency. As a condition for any work in Enighed Pond, the constraints on development of Salt Pond areas must be considered. Protection of the marine environment must be given high priority during construction of any proposed improvements. Strong erosion and drainage control measures must be taken to replace the salt pond's function as a sediment trap.

(2) CHOCOLATE HOLE - GREAT CRUZ BAY

Chocolate Hole and Great Cruz Bay are located on the southwest coast of St. John. The two areas are both significant natural areas and areas subject to strong development pressure. Water quality in both areas is subject to degradation from surrounding residential developments. Great Cruz Bay has already been impacted by these development activities.

Special attention to the salt ponds surrounding Chocolate Hole, the nearby beach, and Chocolate Hole Bay is needed. The two salt ponds and former pond now open to the sea are important as wildlife areas and as sediment traps to protect the water quality of Chocolate Hole.

Recommendations: Generally, the policies outlined in this plan should suffice to insure that development of Great Cruz Bay and Chocolate Hole will not destroy the amenities that the area presently enjoys. The coastal zone management recommendations with respect to salt ponds, mangroves, beaches, and steep slopes development should be strictly applied to these areas. Future development of Great Cruz Bay and Chocolate Hole should be done in such a manner as to minimize environmental and visual impacts.

(3) LAGOON POINT - CORAL BAY

Although one half of St. John's land area is owned by the National Park Service, there is still a need to protect significant natural areas outside of the Park's boundary. Lagoon Point and its associated coastal and marine resources is such an area. Located in Coral Bay, east of Calabash Boom, Lagoon Point can be a resource complex of immeasurable wealth. In a small area, consisting of 150 acres, Lagoon Point concentrates fine examples of the of the basic elements of a healthy shoreline ecosystem. A mile long fringe reef, mangroves, lagoon and salt pond can all easily be observed. Fishing, swimming and snorkeling can be enjoyed at Friis Bay, within Lagoon Point. An additional value of this site is its function as a living classroom that illustrates some basic lessons in Virgin Islands ecology such as the role of the shoreline by healthy mangroves. Lagoon Point, as an excellent example of the "classical Caribbean fringing reef" has been recommended for inclusion in the Registry of Natural Landmarks. The Department of Conservation and Cultural Affairs has designated 140 acres of submerged land as "The Lagoon Point Territorial Reef Reserve." Both the marine resources and adjacent land area are planned for inclusion in the Territorial Park System.

Coral Bay is the population center of the East End of St. John. Inner Coral Bay Harbor is the site of an illegal fill project as well as a U.S.D.I. Fish and Wildlife Service mangrove restoration project. The best storm anchorage in the U.S. Virgin Islands for larger boats and ships, Hurricane Hole, is located east of Coral Bay.

Recommendations: The CZMP strongly endorses the inclusion of Lagoon Point into the territorial Park System. Careful park management to balance utilization with protection will be needed. It is strongly recommended that Lagoon Point serve as an Environmental Studies Program outdoor classroom to expose sutdents to the lessons to be learned from this area. It is also strongly recommended that development in the upland watersheds adjacent to Lagoon Point be monitored and controlled to minimize adverse impacts to coastal water quality.

The on-going mangrove restoration project should be encouraged and its success monitored. The use of Hurricane Hole for fishing, recreational boating, and as a storm anchorage should be maintained.

CHAPTER EIGHT

Mechanisms For Implementation: Organization and Authorities

This chapter presents the mechanisms for implementing the management program and discusses the organization and permit systems under both the existing and revised coastal regulatory regime.

The reorganization within the Department of Conservation and Cultural Affairs and a revised permit system have been established to facilitate the program's implementation and administration. The relationship of leases and other Territorial and Federal permits to the program are discussed. The last section concerns the rearrangements and amendments to various existing legislative Acts. These necessary rearrangements provide the basis for the revised organization and permit system.

Federal Requirements

The Coastal Zone Management Act stipulates several requirements regarding the authorities and organization for program implementation. Among other provisions, Section 306 of the CZMA requires that a single agency must be designated as a "lead" agency to receive and administer grants for implementation of the management program. Other participating agencies may share planning, regulatory, monitoring, or certain administrative functions. The designated agency must be responsible for the prudent use of funds in the furtherance of the terms and policies of the management program. As such, this agency must have the following capabilities:

a) Fiscal and legal capability to accept and administer Section 306 funds, to make contracts or other similar agreements with participating agencies and to dispense Section 306 funds to such agencies for the purpose of carrying out specific portions of the management program;

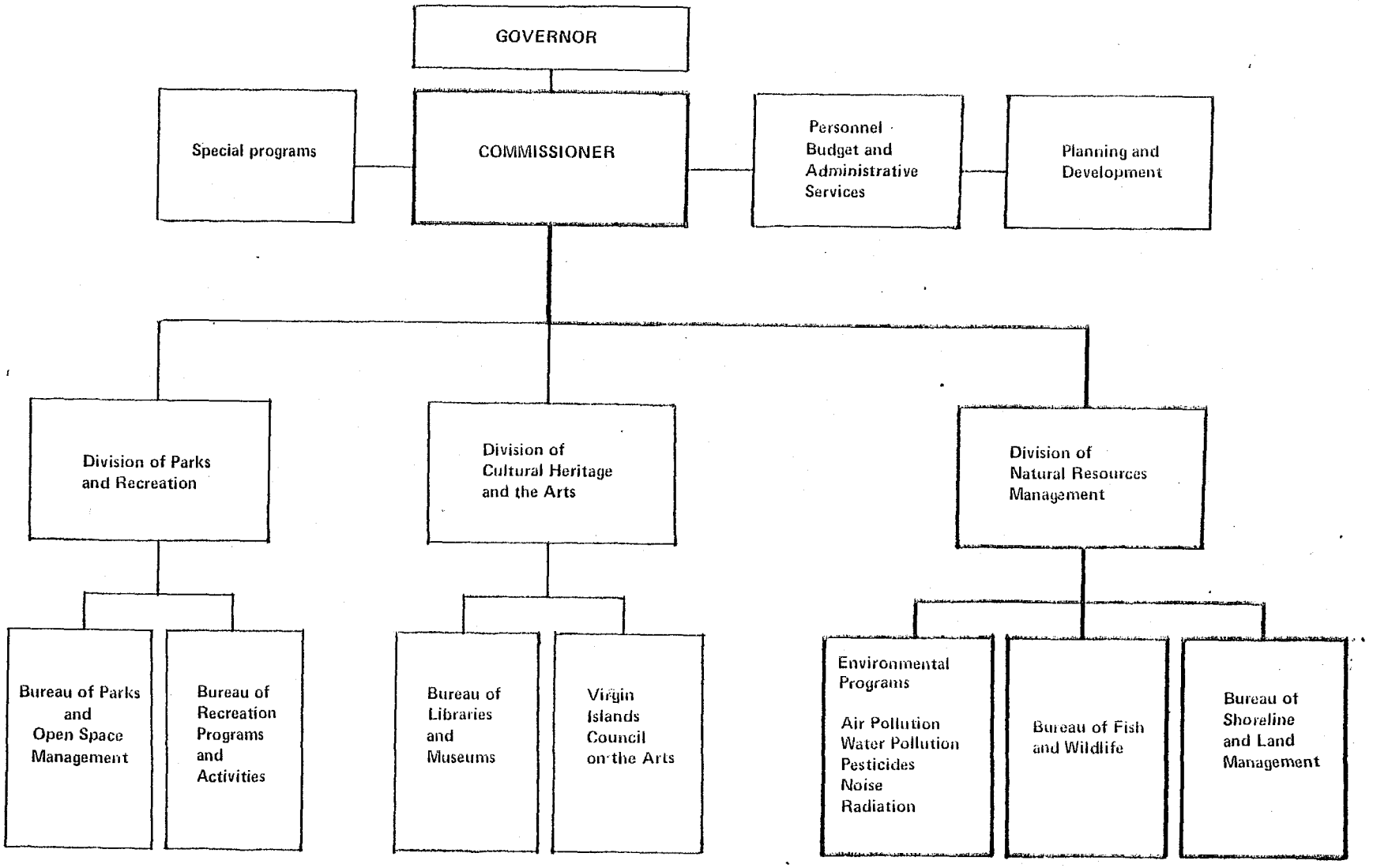
b) Administrative capabilities to monitor and evaluate in a systematic fashion the management of the islands' coastal resources by those agencies with responsibilities under the program;

c) It must be capable of, and in position to make, periodic reports to OCZM regarding the performance of the agencies implementing the program.

FIGURE 8.1

EXISTING ORGANIZATION

Department of Conservation and Cultural Affairs



Existing Management Regulations:

Organization and Permit System

In the Virgin Islands there exists a considerable base of authority to implement a coastal zone management program (see Chapter Three - The Setting). The authority for the existing regulatory system is found in a number of statutes, with the responsibility for the administration and enforcement vested in several governmental entities. As a result, the present arrangements are characterized by fragmentation, overlap, and multiple processes. The most salient problem is not the lack of adequate laws to protect the coastal resources, but that the existing laws are redundant or conflict, lack appropriate standards for administrative action, or fail to specify any time limit within which an agency or administrator must take final action (see Chapter Four, Issues and Problems). In addition, the permitting processes and procedures followed in granting, modifying or revoking permits are vague, and frequently raise questions of whether they provide due process of law for the permittee.

Organization:

The Department of Conservation and Cultural Affairs

The Department of Conservation and Cultural Affairs (DCCA) is the major governmental entity responsible for the administration and enforcement of all territorial laws relating to conservation and coastal resource management. Within DCCA there is a Division of Natural Resources Management with various Bureaus that have responsibility for discharging the administration and enforcement of these laws. Figure 8.1, Existing Organization, illustrates the relationship of the Commissioner of the Department of Conservation and Cultural Affairs, the Governor, the Division of Natural Resources Management and the several Bureaus. The Bureaus and entities relating to conservation and coastal zone management activities are: The Bureau of Fish and Wildlife, Bureau of Shoreline and Land Management, and Environmental Programs. The role of each and other regulatory entities is briefly explained below (see Chapter Three, Institutional/Political Setting).

The Bureau of Fish and Wildlife (BFW) is charged with the management of fish and wildlife resources and promotion of boating safety. Accordingly, all laws pertaining to the regulation of fish and wildlife and the licensing of motorboats reside within the Bureau. Furthermore, Fish and Wildlife provides "extension service" aid in these matters and reviews applications for all

submerged lands permits, earth change permits and special permits and environmental impact statements. BFW is also responsible for the improvements of Wildlife habitat by the planting of feed crops, installing catchments and building fresh water ponds and artificial reefs.

Environmental Programs (EP) is charged with the implementation of an assortment of environmental protection programs. EP administers the air and water pollution control permit system. Planning and construction of sewage treatment systems and water quality monitoring are vested within the Bureau. A pesticide control program is also administered as well as the control of noise and radiation. Relevant to Coastal Zone Management are several permits issued by EP pursuant to Federal and comparable territorial statutes. The permits are the Water Pollution Discharge Permit under the National Pollution Discharge Elimination System (NPDES) of the Federal Water Pollution Control Act Amendments of 1972, and the Air Pollution Discharge permit pursuant to the Clean Air Amendments of 1970.

The Bureau of Shoreline and Land Management (BSLM) is the most significant in terms of regulating development activities in coastal land and water areas. The function of BSLM is to provide for the control and use of shorelines, submerged and filled lands and to provide for environmental protection of all lands and water areas. BSLM administers programs pursuant to the Open Shorelines Act, the Trustlands Occupancy Act, the Earth Change Law, and the Oil Spill Prevention and Control Act. Accordingly, it administers a permit system for the shoreline development or activities under the Open Shorelines Act and the Trustlands Occupancy and Alteration Control Act. It also administers the Earth Change permit program for public projects involving any land alterations. BSLM is responsible for reviewing permit applications for activities on submerged or filled lands, dredging and mining operations, and issuing licenses for oil terminal facilities, and issuing earth change permits for all public projects.

Other Regulatory Entities

In addition to DCCA, there are other governmental and quasi-governmental agencies involved in the regulation of coastal land and water uses. The Planning Office, the Virgin Islands Conservation District (VICD) and the Department of Public Works (DPW) are all vested with a certain degree of regulatory authority relevant to coastal zone management. The Planning Office formulates zoning regulations and recommends zoning changes which must be approved by the Territorial Legislature and Governor. The Zoning District Law is administered and enforced by the Department of Public Works through the issuance of use permits. The Subdivision Law and Regulations for all coastal and inland areas are administered by the Planning Office. VICD approves and issues Earth Change permits for all private projects.

FIGURE 8.2

LAND AND WATER USE LAWS AND IMPLEMENTING AGENCIES

X - Primary Responsibility

O - Limited Involvement

	V.I.P.O.	V.I.P.A.	P.W.D.	C.C.A.	GOV. & LEG.	C.D.
ZONING ADMINISTRATION	O		X	O		
BUILDING CODE			X			
HARBOR CONTROLS (MARITIME)		X				
EARTH CHANGE (LAND ALTERATION)			X	X		X
OPEN SHORELINES				X		
TRUSTLANDS OCCUPANCY & ALTERATION CONTROL (SUBMERGED & FILLED LANDS)				X	X	
HISTORIC PRESERVATION (DISTRICTS)	X		O			
LAND SUBDIVISION	X		O	O		O
FLOOD CONTROL MEASURES	O		X			
AIR and WATER QUALITY POLLUTION CONTROL				X		
FISH and WILDLIFE and BOATING				X		
CUTTING OR REMOVAL OF TREES ADJACENT TO WATERCOURSES				X		
OIL SPILL PREVENTION				X		

V.I.P.O. - Virgin Islands Planning Office
V.I.P.A. - Virgin Islands Port Authority
P.W.D. - Department of Public Works
C.C.A. - Department of Conservation & Cultural Affairs
GOV. & LEG. - Governor and Legislature
C.D. - Conservation District

The Governor and Legislature of the Virgin Islands have a significant role in the use of coastal land and water areas. The use and occupancy of submerged and filled lands are subject to the doctrine of public trust. Under the Trustlands Occupancy, Alteration and Control Act, the permits and leases for use of these areas are issued by the Governor and ratified by the Legislature. They also approve all amendments to the V.I. Zoning Law and Official Zoning District Maps (see Figure 8.2).

The Existing Permit System

The Department of Conservation and Cultural Affairs administers land and water use laws under its jurisdiction through a variety of permit processes. These permit programs are administered under the Division of Natural Resources Management which are illustrated on Figure 8.3. Those regulatory functions conducted by the Department of Public Works, the Planning Office and the Virgin Islands Conservation District are shown on Figure 8.4.

Under the present system, the major Territorial permits related to coastal management are the submerged lands permit (SLP) issued pursuant to the Trustlands Occupancy, Alteration and Control Act, approvals granted under the Open Shorelines Act and permits issued under the Earth Change Law.

Several permits are issued pursuant to Federal and Territorial statutes. A Water Pollution Discharge Permit is required from DCCA under the National Pollution Discharge Elimination System (NPDES) pursuant to the Federal Water Pollution Control Act Amendments of 1972, and similar Territorial Laws. An Air Pollution Discharge permit is also required from the Division of Natural Resources Management. This permit is issued for construction or operation of facilities that emit pollutants into the air pursuant to the Clean Air Amendments of 1970.

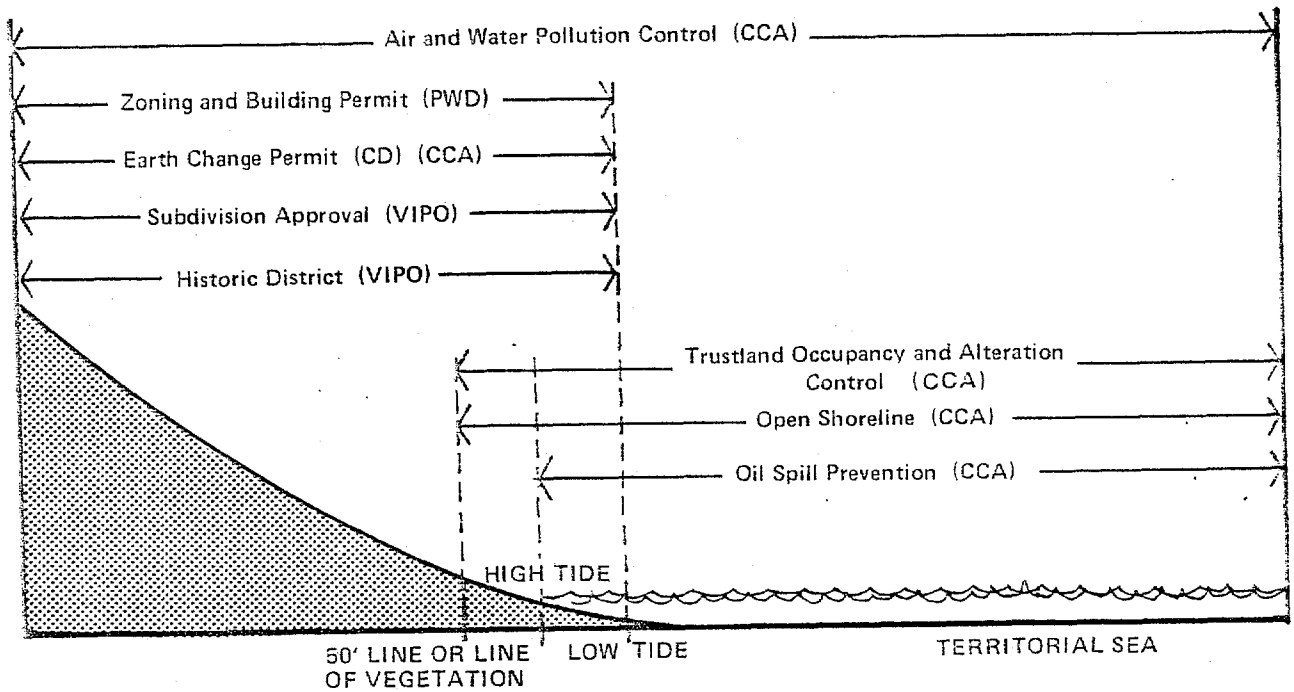
A U. S. Army Corps of Engineers permit is required for (a) the disposal of dredged and/or fill material in the navigable and other water areas in the territory under Section 404 of the Federal Water Pollution Control Act Amendment of 1972; (b) the alteration or erection of structure in the navigable waters (defined from the line of mean high tide seaward to the limits of the territorial sea) pursuant to Section 10 of the River and Harbor Act of 1899 (33 U.S.C. 403); and (c) the transportation of dredged material for the purpose of dumping into ocean waters pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of of 1972. Presently, a simultaneous permit processing procedure exists with the Territorial Submerged Lands permit program and the appropriate Corps permit.

FIGURE 8.3
EXISTING PERMIT SYSTEM

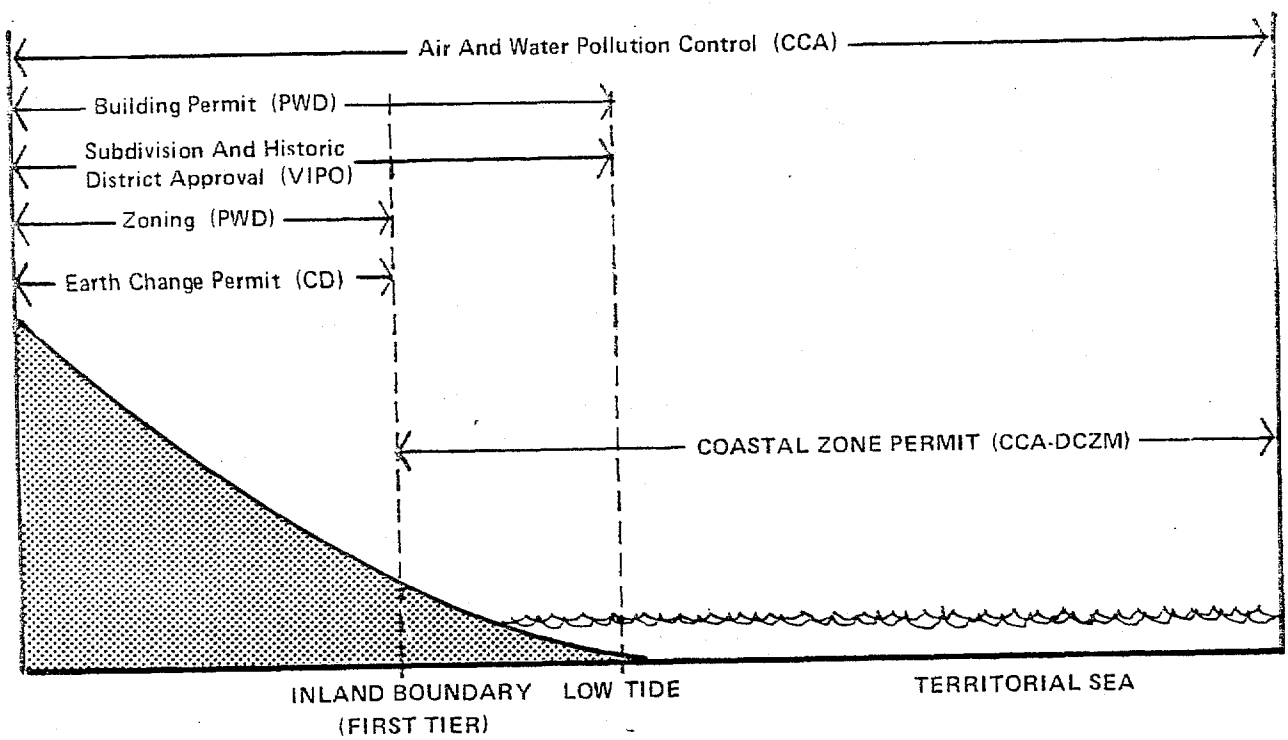
BUREAU / LAWS	ACTIVITY	PERMIT SYSTEM
BUREAU OF FISH AND WILDLIFE Fish and Wildlife Act	Registration, Certification, Licensing of Motor Boats, Fishing and Hunting	Permit request submitted → Commissioner → Grant or Deny
ENVIRONMENTAL PROGRAMS Water Pollution Control Act Water Quality Pollution Control Clean Air Act of 1970 Air Quality Pollution Control	Discharge Permits (NPDES) Air Pollution Control Permits	Permit request submitted → Commissioner → Issue or deny → Municipal Court (15 days) Commissioner ↓ Hearing (Optional) ↑ Issue or deny
BUREAU OF SHORELINE AND LAND MANAGEMENT Open Shorelines Act	Structures and Extraction of Natural Resources	Permit request submitted → Commissioner → Grant or deny
Trustland, Occupancy and Alteration Control Act	Structure, dredge and fill, and extraction of natural resources	Permit request submitted → Commissioner → Governor approval or denial → Legislature ratify approved permits Commissioner ↓ Review and Comments by P.W.D. V.I.P.O. V.I.P.A. C.R.I. Governor approval or denial ↓ Public hearing (optional) Legislature ratify approved permits ↓ Appeal decision to District Court of V.I.
Oil Spill Prevention Act	Licenses for terminal facility	Permit request submitted → Commissioner → Grant or deny
Earth Change Law	Land Alteration	Permit request for public projects → Commissioner → Grant or Deny Grant or Deny ↓ Appeal decision to District Court of V.I.

FIGURE 8.4
AREAS OF JURISDICTION

EXISTING



PROPOSED



The Department of the Interior is responsible for the administration of the terrritorial submerged lands with respect to oil, gas, and other mineral resources, excluding coral, sand, and gravel pursuant to Public Law 93-435, 1974.

Implementation Mechanisms

The mechanisms to implement the program consist of two parts; (1) an organization with administrative, fiscal and monitoring responsiblity, and (2) the means or necessary powers to administer land and water use regulations, control development in accordance with the management program, resolve conflicts among competing uses, and acquire interests in lands, waters and other property through condemnation or other means. With respect to the implementation and enforcement of a coastal zone management program, it is worthwhile to reiterate that the territorial government is the only level of government in the Virgin Islands, and as such, will continue to directly exercise authority over all land and water uses within the coastal zone. Accordingly, all authority for implementation of the program will be vested in an agency at the territorial level.

Overview

The implementation mechanisms involve organizational changes within the Department of Conservation and Cultural Affairs. The Bureau of Shoreline and Land Management will be reconstituted as the Division of Coastal Zone Management (DCZM) and a Bureau of Enforcement will be created. The primary mechanisms by which the CZM program will be implemented entail the institution of a permit system for the coastal zone. A coastal zone permit will be required for all development activities within the first tier. The system will be administered through the Department of Conservation and Cultural Affairs with each proposed project evaluated on an individual basis. There will be two types of permits: Minor and Major. The Commissioner of Conservation and Cultural Affairs will approve, disapprove, or set conditions for approval for all minor and major coastal zone permits. A well-defined appeal mechanism and specified time limit for departmental action is included in the permit system. Essentially, the coastal zone permit is a certification that a particular project conforms to:

1) the goals and policies of the approved CZM program;

2) the Coastal Land and Water Use Plan; and

3) all applicable rules, regulations, and standards which are administered by the Department of Conservation and Cultural Affairs.

The Permit System

The major provision for implementation of the coastal zone management program is through the institution of a permit system to regulate all development activities within the first tier of the coastal zone. There are two types of coastal permits required for development activities: (a) minor permit and (b) major permit. There are also provisions for an emergency permit to be granted under special "emergency conditions."

The Coastal Zone Permit

The Coastal Zone Permit (CZP) is a comprehensive permit that incorporates, subsumes, or supplants, in whole or in part, all of the coastal management-related permitting functions presently conducted under the Environmental Programs and Bureau of Shoreline and Land Management, the Department of Public Works, the Virgin Islands Conservation District, and the U. S. Army Corps of Engineers.

The coastal zone permit incorporates the Earth Change permit for all public and private projects within the first tier of the coastal zone. Earth Change permits for all private and public developments in the second tier will be issued by the Virgin Islands Conservation District. All enforcement actions relative to permits issued by the Department of Conservation and Cultural Affairs will become the responsibility of the DCCA, rather than the Department of Public Works.

The permitting functions under the Open Shorelines and the Submerged Lands permit under the Trustlands Occupancy, Alteration and Control Act are merged and incorporated as provisions of the CZP. The use permit administered by the Department of Public Works under the Zoning Law within the first tier of the Coastal Zone is also incorporated into the CZP. The dual processing procedure of the U. S. Army Corps of Engineers permits and local permits will continue (see Figure 8.4).

In serving the Division of Coastal Zone Management's function as a "clearinghouse," the coastal zone permit will initiate the appropriate processing for both the NPDES and the Air Pollution

Discharge Permit when one of these permits is required for a coastal zone activity, or when Federal consistency certification is required.

The procedure for processing subdivision applications is virtually unchanged. The Planning Office remains the agency responsible for approving subdivision plans. Rather than receipt of an Earth Change permit from the Bureau of Shoreline and Land Management, the applicant will now receive a coastal zone permit. The CZP for subdivisions is a partial permit with final approval contingent upon the Planning Office. The permit indicates that the subdivision is consistent with the provisions of the Coastal Zone Management Program. All of the implementation procedures and authorities are described in detail in the following sections.

Types of Permits and Excluded Activities

Specific guidelines for determining the type of permit required should be promulgated by the Commissioner of Conservation and Cultural Affairs. The following general conditions should serve as a guide to the Commissioner in setting these standards.

Major Permit - A major permit is required for any project or activity unless the development is to be completely conducted landward of the line of mean high tide and satisfies one of the following criteria, in which case a minor coastal zone permit shall be required:

a) The development consists entirely of improvements to an existing structure for which improvements cost the developer less than forty-two thousand dollars ($42,000); or

b) the development consists of a subdivision or the construction of one or two single-family residences or a duplex on any parcel of record on the effective date of this chapter; or

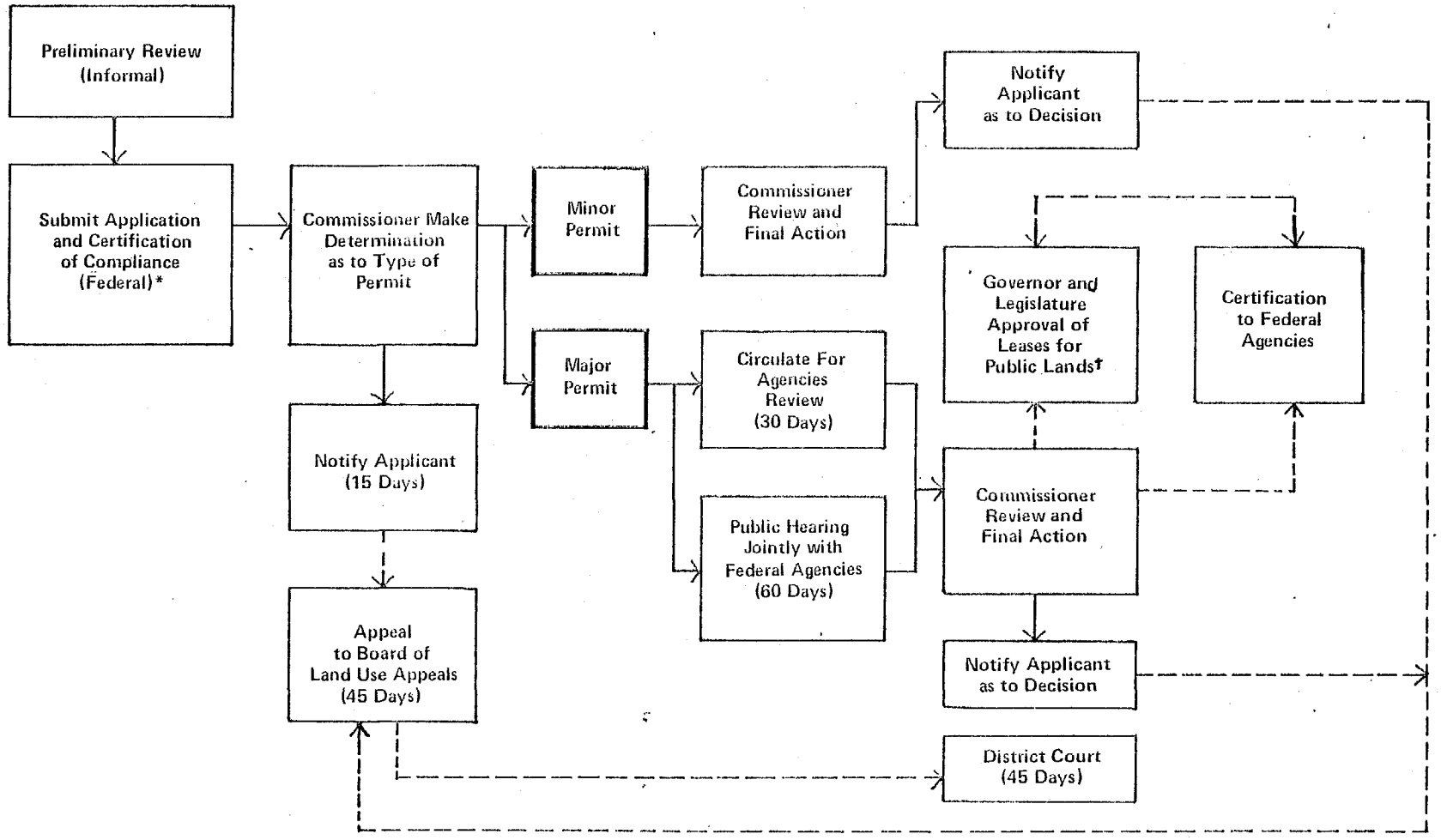
c) the development consists of one or more structures valued in their entirety at less than sixty-five thousand dollars ($65,000); or

d) the development consists of any other development, except the extraction of materials, valued at less than fifty-six thousand dollars ($56,000); or

e) the development consists of the extraction of materials valued at less than seven thousand dollars ($7,000), provided that the Commissioner shall, by regulation, require a major coastal permit for the extraction of certain materials or any materials from certain areas.

FIGURE 8.5

COASTAL ZONE PERMIT REVIEW PROCESS:
DIVISION OF COASTAL ZONE MANAGEMENT (DCZM)



* Certification Required: Activities Needing Federal License of Permit or Federal Activities or Development Projects Request for Federal Assistance

† Governor and Legislature must approve all leases for publicly owned filled lands and permits for the use or occupancy of all submerged lands.

Emergency Permit - The Commissioner of Conservation is empowered to issue permits without compliance to established procedures for coastal zone permits in case of emergency. For the purpose of this program "emergency" is defined as a situation in which an activity or facility presents an imminent and substantial endangerment to public health, safety, or welfare.

Excluded Activities - Certain activities are excluded from the permit provisions. Ordinary maintenance and repair do not require a coastal permit. Any permitted facility located in the coastal zone may be repaired and maintained without a coastal zone permit provided there is no structural alteration, expansion, or enlargement of the facility.

Determination of Type of Permit Required

(1) Evaluation and Decision - When an application for a permit is received, the Commissioner of Conservation and Cultural Affairs will review it for completeness and make a determination as to whether the request will require a minor or major permit. The Commissioner will also rule on emergency permits and activities to be excluded. The Commissioner may request any additional information deemed necessary within reasonable terms for making a proper determination. Additional information may be in the form of environmental impact assessment consisting of a description of the proposal, identification and evaluation of the existing conditions, and the expected and potential environmental and socio-economic impacts. All applications must contain detailed information about the proposal or use in a format prepared pursuant to rules and regulations issued by the Commissioner (see Figure 8.5, Proposed Coastal Zone Permit Review Process).

(2) Exceptions - The Commissioner will rule on emergency permits and make determinations for excluded activities, subject to guidelines established pursuant to Rules and Regulations. All development activities sponsored by DCCA which require a coastal zone permit will be acted upon by the Commissioner. Both the determination of the type of permit required and the approval or disapproval of these applications will be made by the Commissioner.

(3) Time to Act - The applicant shall be notified of the decision as to the type of permit required by the Commissioner within fifteen (15) days after a completed application has been submitted.

(4) Appeal - The applicant for a permit or any aggrieved person has the right to appeal the decision of the Commissioner of Conservation and Cultural Affairs as to the type of permit required to the proposed Board of Land Use Appeals within forty-five (45) days. The Board may affirm or reverse the decision of the Commissioner.

(5) Judicial Review - Any applicant or person aggrieved by a decision of the Board of Land Use Appeals has the right to file a petition for judicial review in the District Court of the Virgin Islands within forty-five (45) days after the Board's decision has become final.

Administrative Procedures - Minor Permit

(1) Decision - The Commissioner of Conservation and Cultural Affairs is empowered to issue or deny all minor permits. The Commissioner is empowered to conditionally approve a permit application to ensure that mitigating measures are employed to minimize impacts on coastal resources. When denying a permit, the Commissioner will make findings of fact in support of stated conclusions that the proposed development would be inconsistent with the specific objectives and policies of the CZMP.

(2) Time to Act - The Commissioner will grant or deny minor permit requests no later than sixty (60) days after a completed application has been submitted. If a decision on the application is not made either denying or granting the permit within the stipulated sixty (60) days time period, the application will automatically be deemed approved.

(3) Appeal - Any applicant or aggrieved person has the opportunity to appeal any decision made by the Commissioner on a minor permit within forty-five (45) days after the decision becomes final. The Board of Land Use Appeals is empowered to affirm, reverse or modify the decision of the Commissioner.

(4) Judicial Review - Any applicant or person aggrieved by a decision of the Board of Land Use Appeals has the right to file a petition for judicial review in the District Court of the Virgin Islands within forty-five (45) days after the Board's decision has become final.

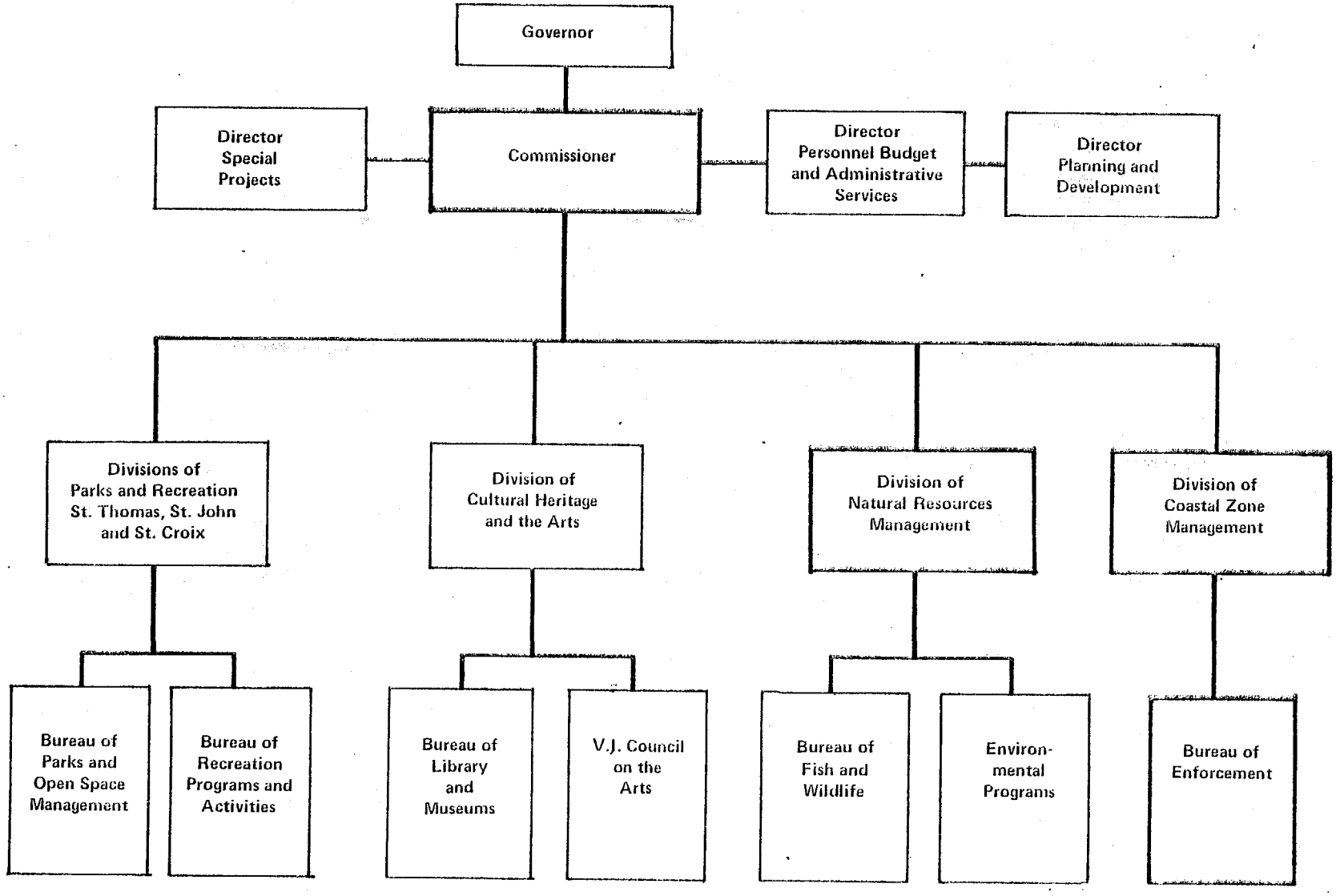
Administrative Procedures - Major Permit

(1) Review by Agencies - All major permits will be referred by the Division of CZM for review and comment to the Virgin Islands Department of Commerce, Virgin Islands Planning Office, Department of Public Works, Virgin Islands Port Authority, Caribbean Research Institute of the College of the Virgin Islands, National Park Service, and Virgin Islands Conservation District. Comments must be submitted to the Division of CZM within thirty (30) days of receipt of an application referred by the Division, after which it may be presumed the agency consulted has no comments to make. Consulted agencies may request a specific extension of time of up to thirty (30) additional days in order to respond to an application. In addition to consultation with governmental agencies, the Commissioner of Conservation and

FIGURE 8.6

ORGANIZATION

DEPARTMENT OF CONSERVATION AND CULTURAL AFFAIRS



Cultural Affairs will consult private organizations and persons who have expressed an interest in a project in order to solicit their information, opinions, recommendations, and advice on the proposed project. The Commissioner shall make available to the public such materials as may be necessary to promote better understanding of the project.

(2) Hearing - A public hearing shall be conducted by the Division of CZM within sixty (60) days after a completed application has been filed, and after appropriate written notice of the time and place and the nature of the application. Whenever practicable and necessary, the Division of CZM will arrange with Federal agencies to conduct joint public hearings.

(3) Decision and Standards for Permits - The Commissioner is empowered to issue, deny, or modify all major coastal zone permits and variances based on specific findings of fact in support of stated conclusions relative to the objectives and policies of the CZMP. The Commissioner will prescribe appropriate rules, regulations, and standards related to the submission of applications for major coastal zone permits.

(4) Time to Act - The Commissioner will take action upon an application for a major permit after public hearings, within ninety (90) days after a completed application has been filed with the Commissioner.

(5) Appeal - Any applicant or aggrieved person has the opportunity to appeal any decision made by the Commissioner on a major permit within forty-five (45) days after the decision becomes final. The Board of Land Use Appeals is empowered to affirm, reverse or modify the decision of the Commissioner.

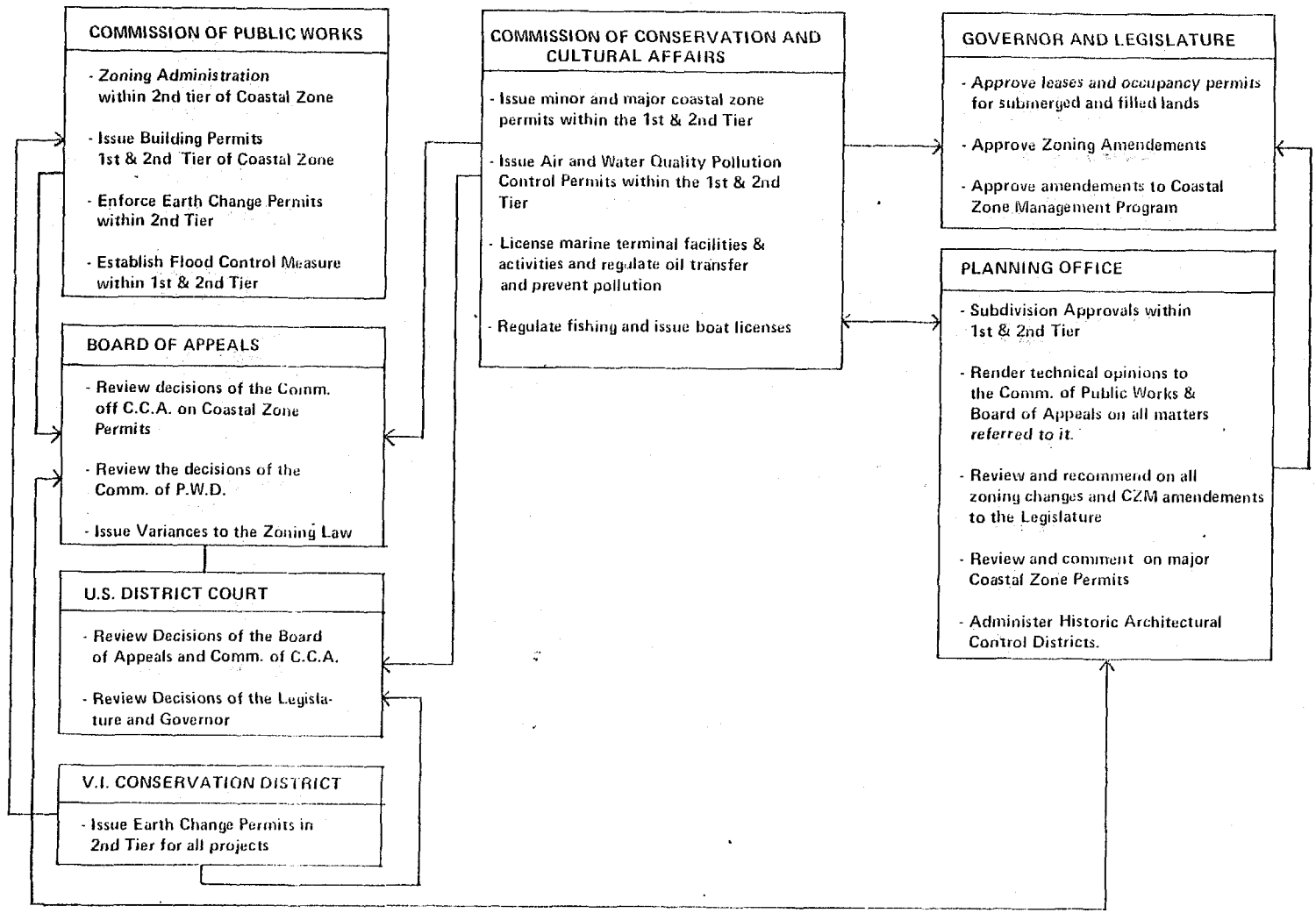
(6) Judicial Review - Any applicant or person aggrieved by a decision of the Board of Land Use Appeals has the right to file a petition for judicial review in the District Court of the Virgin Islands within forty-five (45) days after the Board's decision has become final.

Since many of the regulatory authorities concerning the development and conservation of shorelands and water areas are presently vested in the Department of Concervation and Cultural Affairs (DCCA), it has been designated as the agency responsible for implementing the program (see Figure 8.6, Organization).

COMMISSIONER OF CONSERVATION AND CULTURAL AFFAIRS

The Commissioner is responsible for directing the activities of the Division of CZM. The Commissioner shall make a determination as to the type of permit, minor or major, which will

FIGURE 8.7
REGULATORY SYSTEM FOR LAND AND WATER ACTIVITIES



be required for each proposed project within the first tier of the coastal zone boundary. This determination by the Commissioner shall be subject to guidelines to be established pursuant to Rules and Regulations.

All major and minor permits will be issued by the Commissioner. The Commissioner will be empowered to issue, deny or modify all coastal zone permits. Therefore, in granting a permit, the Commissioner may prescribe reasonable terms and conditions to assure consistency with the CZMP and to avoid significant adverse impact on the coastal environment.

The Commissioner, following public hearings, shall promulgate such rules and regulations, guidelines, standards, procedures for filing permit applications and for preparation of an Environmental Impact Assessment or Statement as he deems necessary and appropriate to carry out the CZMP and the implementing measures.

The Commissioner, through the enforcement powers of the Department, shall be responsible for all enforcement actions arising from the implementation of the permit system.

DIVISION OF COASTAL ZONE MANAGEMENT

The present Bureau of Shoreline and Land Management within the Division of Natural Resources Management will be redesignated as the Division of CZM (DCZM) and be vested with the primary responsibilities for the administration of the CZMP. The major function of the DCZM is to provide support such as administrative, clerical, technical, and legal and other services which may be required by the Commissioner in carrying out his duties with regard to the program. The DCZM shall also serve as a "clearinghouse" for all permits issued by DCCA that deal with development activities in the coastal zone. The revised regulatory system for land and water activities is shown in Figure 8.7.

BUREAU OF ENFORCEMENT

A Bureau of Enforcement will be created within the DCZM to enforce all environmental rules, regulations, and standards within the jurisdiction of the Commissioner of Conservation and Cultural Affairs. The Bureau of Enforcement shall be responsible for ensuring that after a permit is issued by the Department, the authorized work or activity is being performed in the manner, and for the purpose, for which the permit was granted.

The Commissioner of Conservation and Cultural Affairs, with assistance from the Bureau of Enforcement, will be able to issue cease and desist orders and to initiate judicial proceedings in the District Court to prevent violations of the CZMP or the permit system. All enforcement actions brought by the DCCA will be represented by the Attorney General or his designated legal representative within the Department of Conservation and Cultural Affairs. This authority is

explicitly intended to allow the Department to bring suit against all other Departments, agencies or instrumentalities of the Government of the Virgin Islands for violations coming within the Department's jurisdiction.

APPEALS BOARD

The Board of Zoning, Subdivision, and Building Appeals has been redesignated the Virgin Islands Land Use Appeals Board. In addition to its present duties, this board is empowered to act upon appeals arising from decisions by the Commissioner of Conservation and Cultural Affairs with regard to the permit system. It may affirm, reverse, or modify the Commissioner's determination of the type of permit needed or the Commissioner's decision on any permit.

JUDICIAL REVIEW

Any applicant for a permit, governmental agency, person, or legal entity aggrieved by the decision of the Board of Land Use Appeals has a right to judicial review of such action or decision by filing a petition in the District Court of the Virgin Islands after such action or decision has become final.

VIRGIN ISLANDS PLANNING OFFICE (VIPO)

Although not directly involved in the issuance of coastal zone permits, the Planning Office will maintain a continued involvement in the management process. The Planning Office should annually review the program in terms of its effectiveness in achieving its goals and objectives and consistency with any comprehensive land and water use plans or programs in effect.

Leases Or Other Authorizations

The leasing or occupancy of any filled or submerged lands in the territory within the jurisdiction of the Government of the Virgin Islands will continue to require the approval of the Governor and Legislature. A coastal zone permit will be issued by the Commissioner for a development activity before the issuance of a lease or permit by the Governor or Legislature for filled and submerged lands.

Federal Consistency Certifications

In compliance with the Federal consistency requirements of the CZMA (Section 307), and in accordance with rules and regulations, the permits issued by the Commissioner shall serve as a certificate of compliance with the management program. When issued, the permit shall indicate compliance as required for Federal permits and licenses. Federal agencies shall notify the Commissioner of all Federal development projects and activities. For further detail, see Appendix B, Virgin Islands Federal Interaction.

Rearrangements of Legislative Regimes

To implement the management program, it has been necessary to effect changes in the existing organization of DCCA and legislative authorities. Various statutory programs have been and recommendations proposed to establish clear policies, legal authorities and criteria necessary for program implementation. The following changes in existing legislation and organization have been made:

(1) The Virgin Islands Coastal Zone Management Act of 1977 has been enacted. It provides for the creation of a Division of Coastal Zone Management and a Bureau of Enforcement within the Department of Conservation and Cultural Affairs for the administration of the management program. The Department of Conservation and Cultural Affairs is designated as the single agency responsible for the implementation of the management program as required by Section 306(c)(5) of the CZMA. The Open Shoreline and Trustlands, Occupancy and Alteration Control Act are merged into the Virgin Islands CZMA. The permit functions under these Acts are incorporated into the coastal zone permit. The Earth Change Law is amended with provisions for all Earth Change permits in the first tier of the coastal zone to be issued by DCCA as a part of the coastal zone permit system. In addition, the Earth Change Law amendments include provisions for all Earth Change permits in the second tier to be issued by the Virgin Islands Conservation District.

(2) The Subdivision Law is amended to require that an applicant for a subdivision permit within the first tier of the coastal zone receive a coastal permit from DCCA prior to applying to VIPO for a subdivision permit. In addition, the approval of land subdivisions in the first tier of the coastal zone may require the dedication of public access.

(3) The Zoning Law will be amended to reflect the CLWUP and has been amended to provide for use permits within the first tier of the coastal zone to be issued by the DCZM through the Commissioner of Conservation and Cultural Affairs. The permit processes are so designed that proposed uses or activities are permissible and environmentally sound. The review process is primarily impact-oriented and permits may be withheld, even for permitted uses, if a development activity cannot be so designed to avoid detrimental environmental impacts.

SECTION TWO

Virgin Islands Coastal Zone Management Program

Environmental Impacts

Appendices

Glossary

Bibliography

4

Environmental Impacts

PART IV

Virgin Islands Coastal Zone Management Program Environmental Impacts

Chapter 9. Description of the Proposed Action

see Part Three the Management Program: Chapter Five, Development of a Coastal Land and Water Use Plan. Chapter Six, Shoreline Access. Chapter Seven, Areas of Particular Concern. Chapter Eight, Mechanisms for Implementation.

Chapter 10. Description of the Environment Affected

see Part Two, Context for Planning: Chapter Three, Context for Planning: Background and Setting. Chapter Four, Issues and Problems

Chapter 11. Relationship of the Action to Land Use Plans, Policies and Controls for the Virgin Islands

see Chapter Three, Context for Planning (Development Proposals), and Appendix B, Virgin Islands Federal Interaction (Coordination with other Planning)

Chapter 12. Probable Impact of the Proposed Action on the Environment

The emphasis of the Virgin Islands Coastal Zone Management effort has been to develop a rational environmental program; to accomodate development and economic growth while maintaining or enhancing the quality of the natural environment. As such, impacts of the proposed program on the natural, economic, and social environmental have been assessed during several stages of program development. In the initial planning stages a "Capability Analysis" was conducted to assess the impact of various types of activities on a series of coastal environments (see Chapter Two, Study Procedures). A Technical Advisory Committee (TAC) was established to advise on scientific and technical matters. The TAC represented a variety of interdisciplinary professions and interests, and was responsible for conducting the Capability Analysis (See Appendix B, Public and Local Governmental Involvement).

The Virgin Islands Program is essentially composed of four components; the goals and policies, a coastal land and water use plan, and a permit system and administrative reorganization. The goals and policies (see Chapter Five) however are the basis of the program. The land and water use plan (see Chapter Five) is a graphic representation of the policies. The purpose of the permit system and reorganization is to implement the goals and policies (see Chapter Eight). Consequently, this section will discuss the probable impacts of the goals and policies on the natural, social and economic environment.

The program goals (see Chapter Five) emphasize the balance of social, environmental, economic cultural and aesthetic values, and the recognition of resource capabilities and limitations. Long term social and economic benefits, the protection of the environment and traditional activities, and the public use of the shoreline consistent with tradition, are the thrust of the Program.

The goals of the program will have several effects on the environment. Because the goals are applicable throughout both tiers of the coastal zone they assure that development practices will be consistent throughout the islands. The goals clearly recognize the importance of natural resources and are designed to guide development toward areas tolerant of development and away from areas unable to sustain such activities. Furthermore, they clearly indicate the importance of preserving, protecting and maintaining certain resources.

Coastal policies pertaining to the first tier of the coastal zone are concerned with development, the environment, and amenities.

As a group, the development policies will have a beneficial impact on the physical environment. Uses that are compatible with the natural marine environment, fishing and controlled mariculture are given a high priority and encouraged. The policies recognize the role that a coastal location plays in industrial, commercial, residential, and recreational uses and designates appropriate areas for these activities consistent with natural resource constraints. Non-dependent or water related uses are not permitted in areas suited for coastal dependent commercial and industrial uses. These policies

will have the impact of assuring that future economic development that requires coastal location, ports, marinas, certain industrial, commercial and tourist oriented activities, can occur.

Development along the coast will be clustered into existing developed areas. This will thereby minimize the further destruction of natural areas. The clustering of development will concentrate any negative impacts and make amelioration measures more feasible. Any adverse impacts will be located in predesignated locations. Furthermore, criteria for siting use designations considered impacts on the natural environment. Areas acting as natural buffers will also be preserved. Substantial public investment savings and increased efficiency in the delivery of public services will result. Costly extensions of public utilities and transportation services will be discouraged. Facilities and services can be provided at lower cost. The value of property in existing developed areas will tend to increase. There will tend to be a positive impact on the redevelopment of existing urbanized and downtown areas since business and commercial activities will be encouraged to locate in these areas.

The environmental policies will have a decidedly positive impact on the natural environment. Ecologically important systems will be preserved and protected. Mangroves, grass beds, certain salt ponds and reefs will be preserved thereby enhancing productivity of marine resources. Activities must consider impacts to marine life and seek to minimize any adverse impacts. The environmental policies also recognize that advances in technology and research should be reflected in siting criteria, performance standards and other regulations that relate to maintenance of environmental quality. This will ensure that future practices will be consistent to the maximum extent with sound environmental resource management.

Policies covering water quality acknowledge conformance with federally promulgated criteria and will result in continued upgrading in water quality. Construction in coastal waters will be conducted in a manner that minimizes interference with water circulation and sediment transport to preserve water quality and marine productivity. Offshore sand and gravel removal will also be conducted in a manner that will not adversely affect marine resources. Dredge and fill activities will be conducted with similar diligence.

As a group, the environmental policies will accomodate long term development while maintaining and enhancing the quality of the natural environment. Education, scientific, cultural, and historic values will be protected. Rare and endangered species habitat will also be protected.

The amenity policies will result in the encouragement of boating, fishing and common uses of coastal resources. Areas vulnerable to visual intrusions will be protected by the regulation of certain criteria: size, height, color, setback and landscaping criteria. These policies will result in the maintenance of high aesthetic qualities for many APCs and other areas within the coastal zone.

Agricultural land will be preserved; these areas being utilized either for agricultural purposes, or as open space/buffer zones. Increased development which would impact coastal waters will thereby be reduced. Site development and height restriction standards insure that visual access to the shoreline and of the coastal waters will continue to be maintained, if not increased.

One of the most significant social impacts of the program will be the adoption by the Virgin Islands Government of policies regarding public access to and of the shoreline. This will result in a basis from which a program for the securing of public access can be established utilizing a variety of common law doctrines, easement and fee simple purchases.

Coastal policies pertaining to the second tier of the coastal zone are derived from the existing Virgin Islands Earth Change Law, Chapter 13, Title 12, Virgin Islands Code. This law applies to all private and public land alteration activities effecting coastal land and water resources. The implementation of these policies, consistent with the goals of the management program will insure the mitigation of negative impacts such as erosion, sedimentation, siltation, and pollution on the coastal resources of the Virgin Islands. This will assure that adverse impacts particularly to reef areas and marine meadows which are intolerant to the effects of siltation and sedimentation will be attenuated and their vital natural functions maintained.

The management program also contains numerous guidelines for use in the promulgation of rules and regulations pursuant to the Virgin Islands Coastal Zone Management Act of 1977. A number of the guidelines refer to the conservation of and the specific use of coastal environments.

The guidelines for steep slopes and low relief shorelines address low density residential development and conservation uses on steep areas, and a maximum of medium density residential development for low relief areas. As a result, areas for future residential development to meet the need of a growing island are consistent with resource capabilities. Construction should be prohibited on areas of severe building constraints with these sites considered for incorporation into the emerging Territorial Park System as open space areas. Degradation to the marine environment caused by siltation and sedimentation resulting from development will be alleviated or at least attenuated.

The guidelines for developed bays and shorelines insure that where appropriate, these areas will be utilized for water dependent commercial and industrial uses. The present problem of precluding uses that require a coastal site by those non-water dependent or related activities will be alleviated. A prohibition of direct wastewater discharge into any developed bay will facilitate improvement of coastal water quality and adherence to federal standards. The maintenance and creation of waterfront parks will be acknowledged as a priority use of urban waterfronts, thereby setting policy for the emerging Territorial Park System.

The guidelines for beach areas address the preservation and conservation of beaches. Adverse impacts to beaches caused from upland activities will be reduced. Shoreward earth change and drainage modifications will be controlled. Dredging will also be prohibited from bays with beaches except under certain carefully controlled and monitored situations. Therefore, possible beach erosion will be prevented.

The most significant impact of the guidelines for mangroves is the preservation of the two last remaining large mangrove areas. Salt River, St. Croix, and the Mangrove Lagoon, St. Thomas, are both APC/APR designated for preservation. Most activities should be prohibited outright and those permitted carefully controlled and monitored. These actions will result in maintenance of these important marine resource areas. As a result marine productivity will be maintained or enhanced (see Appendix E and E1). Habitat for wide variety of fish and wildlife will be maintained. Habitat for species as the White-crowned Pigeon (Columba eurocepholus) and the rare and endangered Brown Pelican (Leleconus accidentalis) will be preserved.

The preservation of mangroves will have a positive impact upon the entire spectrum of marine resources. The high quality of adjacent coastal waters, reefs, grass, beds, will in part be assured by the maintenance of mangrove areas which trap silt, debris, and ameliorate other consequences of runoff.

The crucial function of many salt ponds as sediment traps/retention ponds and filters can be assured by the preservation of these areas. Protection of salt ponds will result in the maintenance of high water quality and other marine resources that are intolerant to sedimentation and siltation.

Guidelines for grass beds and algal plains will assure that their destruction will be minimized. Any uses in or adjacent to grass beds that impede sunlight, or cause perturbations will be prohibited. The integrity of these areas will be maintained. As a result, the myraid of marine species which inhabit the areas will continue. The most notable is the queen conch (Strombus gigas) and several species of rare and endangered sea turtles (green Hawskbill and Leatherback). In addition, retention of grass beds will have beneficial impacts on sand areas and help retard any loss of beach material by stabilizing effects.

The guidelines toward sand bottoms address the use of these areas will be consistent with sound environmental management. Prior to any activity it should be demonstrated that there will not be an adverse impact to adjacent marine resources.

The tropical reef is a complex association of hundreds of species of plants and animals. Each reef and algal ridge should be individually assessed to determine its value to ecological systems. The guidelines toward reefs and algal ridges insure that, where appropriate, these resources will be preserved. Habitat for the fish and other marine species will be retained, thus assuring at least current levels of marine productivity. Preservation of important reef systems will assure maintenance of reefs as natural breakwaters, thereby attenuating wave action and maintaining natural erosion and accretion rates. As a result, valuable shorefront resources will be protected from loss.

Preservation of certain offshore islands and cays will have several positive impacts. The relatively pristine environments of the cays will be maintained. Use of the area for preservation will afford nesting and habitat areas for a number of wildlife species, some of which are rare and endangered or near being so.

Chapter 13. Alternatives to the Virgin Islands Coastal Zone Management Program

Throughout the development of the Virgin Islands Coastal Management Program a variety of alternatives to specific elements of the Program were considered. Many of these derived from comments received by the involved territorial government agencies, Federal agencies, and public interests. The consideration of alternative ideas, positions, and possibilities took place over two and one half years. The record of this process consists of thousands of pages. Any attempt in this environmental impact statement to reconsider all policy and programmatic alternatives would only repeat the detailed record which the Virgin Islands have already compiled.

Normally, at the time a coastal management program is submitted for approval, most of the substantive decisions regarding the policies, how the program is to be implemented, etc., will have been made. This is not to say that changes in substance can no longer take place. What is left in the way of alternatives deals with procedures. A brief description of some of the alternatives which were considered in the development of the coastal program is reviewed in the procedural alternatives, and those still open to the State at this time are discussed below along with the Federal alternatives.

A. Federal Alternatives

The Secretary of Commerce could delay or deny approval of the Virgin Islands Coastal Management Program under the following conditions:

1. <u>If Federal agency views were not adequately considered or the program does not fully meet the requirements of the CZMA</u>.

Section 306(c) of the CZMA requires the Secretary of Commerce to make findings that a State coastal management program meets the requirements outlined in the CZMA prior to granting approval.

Section 307(c) of the CZMA states "[t]he Secretary shall not approve the management program submitted by a State pursuant to section 306 unless the views of Federal agencies principally affected by such program have been adequately considered."

If it were shown that principal Federal agency views were not considered during development of the program, <u>or</u> that the State does not meet specific CZMA requirements, then the Secretary could deny the application or delay approval pending required changes. The impacts of a negative decision are clear:

> The Virgin Islands Coastal Management Program may continue to be implemented, but without Federal assistance, funded through State appropriations. The considerable Federal funds which might have made available to help implement the program would not be passed on to State agencies.
>
> Potential delays in meeting the objectives of the CZMP could result. Many of the program elements, to be achieved as described in Part 3, would either be delayed or neglected. Many of the elements described could be achieved only through additional Federal funding assistance.

The implications and the degree of magnitude of impacts this might have on the natural and social environment can only be conjectured.

The provisions of Section 307 of the CZMA (Federal Consistency) would not apply to Federal agencies' activities in the coastal zone, meaning the coordinated governmental approach contemplated in the national program would not be fulfilled. This omission could mean that Federal agencies could take action which would conflict with the objectives of the State in the coastal zone.

B. State Alternatives

In several ways the impact of the program can best be assessed from the perspective of what would result in the absence of the CZM Program. Should no Management Program be adopted, it is highly unlikely that any significant changes will occur in land and water uses regulations, organizations and authorities for resource management, or the type or level of land and water use laws in the Virgin Islands. The existing problems and concerns (Chapter Four) are generally recognized to be urgent issues; however, aside from the CZMP, there are few proposed solutions to the problems.

There is no comprehensive plan for the Virgin Islands. The H.U.D. 701 Program of the Planning Office will be completed by year's end; however, it is uncertain how this program will be implemented at this time. The 1972 Zoning Law is not a comprehensive plan and is not adequate to insure sound future development. Aside from the CZMP, there are no studies or plans to implement any comprehensive land use regulations for the Virgin Islands. There are no plans to reevaluate the existing zoning or sub-division regulations except on an individual basis.

Aside from the CZMP there are neither plans nor adequate funds available for changes within DCCA dealing with Shoreline and Land Management activities, Earth Change procedures and shoreline erosion, leasing arrangements, oil spill contingency, enforcement actions or beach access problems.

Throughout the development of the Virgin Islands Coastal Zone Management Program a number of alternatives for the program elements were put forth and considered. The following is a discussion of the various alternatives, and the rationale for either their acceptance or rejection.

1. Authorities and Organization: Agencies to Fund, Implement, and Administer the Program

Several alternative organizational arrangements were considered for implementing the Virgin Islands Coastal Zone Management Program. The Planning Office, Department of Public Works, the Department of Conservation and Cultural Affairs, and the possible creation of a new super agency were assessed for potential efficiency, effectiveness, balance of program, and long term benefits. The Planning Office is presently charged with developing the management program and as such is in the best position to interpret its provisions. However, the statutory mission and purview of the Planning Office is not consistent with the broad aims of the program.

The Department of Public Works (DPW) presently administers the Zoning Law, and as such has experience in the arena of land use regulations. DPW is also involved in the enforcement of the Earth Change Law.

The same lack of a sufficiently broad purview that exists with the Planning Office alternative exists with the DPW (see Chapter Three, Context for Planning, Political Institutional Setting, and Chapter Eight, Mechanisms for Implementation).

The third alternative was the creation of a new separate agency. While a certain degree of autonomy could be gained, several problems ensued with this consideration. Inter-agency coordination between the new super-agency and the existing coastal management related programs of DCCA would be inferior to the intra-agency cooperation. The Organic Act (see Chapter Three, Context for Planning, Institutional Political Setting) limits the number of executive departments to the existing thirteen. As a result, the new agency would have to be placed within the Office of the Governor. Presently there are over ten agencies within the Office of the Governor, and political sentiments are unfavorable to the creation of any additional entities.

The Department of Conservation and Cultural Affairs is the umbrella conservation agency in the Virgin Islands and currently administers a coastal zone permit system (see Chapter Eight, Mechanisms for Implementation). The broad concerns of the agency, the existing basic organization, staff, and experience in administering the present coastal regulatory authorities made this alternative preferrable. Furthermore, DCCA also administers related coastal legislation in terms of boating and fishing laws and CZM related environmental laws such as the air and water pollution programs.

Alternatives were also considered in the selection of a mechanism to insure compliance with the provisions of the CZM Program. The existing shoreline permit system administered by the Bureau of Shoreline and Land Management, Department of Conservation and Cultural Affairs, was considered as an alternative. Presently, a permit is issued for submerged and filled lands under the Trustlands Occupancy, Alteration and Control Act and the Open Shorelines Act (see Chapter Three, Context for Planning, Political/Institutional Setting, and Chapter Eight). A permit is granted for activities on submerged or filled lands by the Governor and Legislature, and along shorelines (fifty feet from mean-low tide and/or line of permanent vegetation) by the Commissioner of Conservation and Cultural Affairs. Criteria for issuing the permits is found in the statutory language of the Acts. No rules and regulations have been formally adopted. A third permit is issued under the Earth Change Law for land alteration activities. This permit is granted by either DCCA or Soil Conservation District depending upon the nature of the activities, and enforced by the Department of Public Works. The present system involves considerable duplication in jurisdiction, is confusing, unduly complex to administer, and has no detailed standards or criteria for evaluating proposals (see Chapter Four, Issues and Proglems, and Chapter Eight, Mechanisms for Implementation). This alternative was rejected.

A second alternative was to revise the existing permit system (see Chapter Eight, Mechanisms for Implementation). Under this alternative, two major coastal Acts would be merged and the existing permit system consolidated. A single coastal zone permit would be issued by the Commissioner of DCCA. The coastal permit would replace the Open Shorelines Permit, the Submerged Lands Permit and the Earth Change Permit in the first tier of the coastal zone. The overwhelming positive aspects of this alternative lead to its selection as the recommendation.

2. Alternative Boundaries

Three alternative boundary definitions were considered. The first entailed the entire Virgin Islands being within the coastal zone with development activities regulated via a permit system and enforced through a Bureau of Enforcement. This alternative proved unsatisfactory. A tremendous and unnecessary administrative burden would be placed upon the permitting agency. Some uses and activities in areas that would not directly and significant impact the coastal zone would have to be regulated, and the large magnitude of permits would prove cumbersome and delaying. Furthermore, the type of inland activities which would directly and significantly affect the coastal waters are adequately controlled by several existing regulatory-statutes (see Chapter Eight, Mechanisms for Implementation). This alternative was rejected.

The second alternative involved delineating the boundary along a relatively narrow band of shoreline. The boundary would be drawn along a series of coastal roadways, the landward extent of filled lands, contour lines and certain other topographic features. While this option would reduce the administrative burden, it would not adequately acknowledge the relationship of certain inland areas and would artifically divide the natural physiographic unity of the islands and the coastal waters. Goals and policies of the coastal zone program would not be legally enforceable outside this narrow band. This alternative was rejected.

The third alternative involved utilizing a "two-tier" approach to boundary delineation. With this alternative, the entire Virgin Islands is considered to be within the coastal zone management area. The program goals apply throughout the Virgin Islands. A relatively narrow band along the coastline would be differentiated from management purposes. This coastal area is the "first-tier" and includes the coastal waters and offshore islands and cays and would be regulated through a coastal permit system and the applicable coastal policies. The "second-tier" includes the remaining inland portion of the island. Management there would be undertaken through existing environmental regulatory statutes, especially the Earth Change Law. This alternative merges the positive aspects of the other two options. The physiographic nature of the Virgin Islands and the coastal waters are recognized. Coastal goals and policies will be legally enforceable through existing environmental legislation and through the Virgin Island Coastal Zone Management Act of 1977. Those coastal areas with a stronger relationship to the coastal waters can be stringently regulated without a serious administrative burden. This alternative was chosen.

3. Alternative Areas of Particular Concern

The alternatives considered for GAPC designations concerned the process for nomination. The first alternative entailed designations by the CZM staff of the Planning Office. This option had the positive aspect of allowing for determinations to be made by individuals in a position to fully understand the designation criteria, and who were familiar with the full breath of coastal resources, problems, and issues. This approach was considered unacceptable however, because of the lack of public and governmental input and participation in the process.

The second alternative was for the CZM staff, staff from the Department of Conservation and Cultural Affairs, and the members of the Advisory Committees (attached to the Planning Office for program development) to nominate and designate APCs. This would permit a fuller range of input into the designation process. The advisory committees and DCCA are staffed with technical/professional individuals and scientists who would be cognizant of resource utilization and problems. However, the lack of expertise concerning economic and social issues would result in a predominance of APCs derived from an environmental/natural resource perspective.

The third alternative was public nominations with actual designation by the Virgin Islands Planning and incorporation into the Coastal Zone Management Program. A form for public nomination would be distributed to individuals on the CZM mailing list, Virgin Islands Government agency staff, Federal agencies, and distributed through the libraries, Planning Office, and Administrators Offices (see Appendix A, Public and Governmental Involvement, Appendix B, Federal Interaction and Appendix C, Form for Nomination of Areas of Particular Concern). This alternative was selected. The nomination process provided the widest possible input from all parties affected by the development of the CZM program. Designation of APCs by the CZM staff permitted scrutiny of the nominations by those familiar with the nomination criteria, range of coastal issues and problems, and the scope of the program. Incorporation into the management program and recognition of the designation in the Virgin Islands Coastal Zone Management Act of 1977 ensure that these areas will receive special management attention.

4. Alternative Designations of Permissible Uses

The alternatives for the Permissible Use element centered around the degree of detail and specificity to be accorded in designating priority uses. The first alternative involved setting priorities at a broad policy level as found in the section on Coastal Policies (Chapter Five). This proved too general and did not provide the guidance necessary for addressing the issues and problems (Chapter Four).

The second alternative was to deal with the priority of use concept through the Priority of Use Matrix (Chapter Five). Priorities were assigned to a list of generic uses for each coastal environment. Each use was assigned a first, second, or third priority, or designated not permitted in each coastal environment. While this technique permitted a greater degree of specificity, it was not sufficient to adequately deal with many of the land use problems.

The third alternative was the development of a coastal land and water use plan, where specific use priorities for the first tier of the coastal zone had been designated (see Chapter Five and the Coastal Land and Water Use Map). Nine classes of uses were developed that span a continuum from preservation to high intensity industrial uses. The designations were assigned to the areas in the first tier of the coastal zone. Amendments to Zoning Law would be utilized to implement the general coastal use categories. The use of specific zoning categories would set the final priorities for the first tier area. The alternative was a combination of the previous approachs, and this alternative was selected. The approach recommends general goals for the entire coastal zone, sets priorities of use for coastal environments, develops a plan for general coastal land, and water uses and employs zoning to set final priorities.

Chapter 14. Probable Adverse Environmental Effects Which Cannot Be Avoided

The thrust of the Virgin Islands Program has been to accomodate economic growth and development while maintaining or enhancing the quality of the natural environment. The overall assessment is environmentally beneficial with two possible reservations.

The program will protect and conserve some areas, while encouraging development to be intensely developed in others. Certain types of development such as non-water dependent/related commercial and higher density residential uses will be displaced inland. While this may place greater protection on fragile and valuable coastal resources, it may place greater stress on inland areas and result in some resource damage. However, such loss of inland resources is already occurring and the coastal zone management program represents an improvement over present land use allocations.

Commercial and industrial growth will be limited to specific areas, with the result that it will be more densely concentrated. This may have the effect of concentrating pollution and other adverse affects such as traffic congestion. However, effective and diligent implementation of the program with existing environmental laws should act to mitigate such measures. The program and subsequent regulations may reduce or restrict the usability of certain lands, thereby reducing the value of some coastal property to the property owner. The program will cause the value of other areas to increase.

Chapter 15. Relationship Between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

In certain instances the approval of the proposed Program will restrict local short-term uses of the environment. It will also provide a long-term assurance that the natural resources and benefits of the Virgin Islands Coastal Zone will be available for future use and enjoyment.

Without the implementation of the Program, intense short-term uses and gains, such as provided by piecemeal residential, industrial, and commercial development might be realized. These gains would accrue to a certain segment of the private sector. For the most part, this would result in long-term restrictions on coastal resource use and benefit because of degradation to the environment and loss of basic coastal resources. Without coastal zone management, and a rational land and water use plan, the traditional conflict between coastal resource users will continue.

The Program provides a sound basis for decision making, protects the important natural systems and directs uses to areas with natural capabilities and infrastructure capabilities to absorb growth. As such, the Program will contribute to the long-term maintenance of the environment.

Chapter 16. Irreversible or Irretrievable Committments of Resources That Would Be Involved in the Proposed Action Should It Be Implemented

The approval of the Virgin Islands CZM Program will lead certain areas of the coastal zone to be intensely, and for all practical purposes, irreversibly developed. This would result in the loss of some environment resources. However, development would occur in the absence of Program approval. The CZM program channels this development away from fragile and important resource areas and to appropriate sites based upon land and water resource consideration.

Chapter 17. Consultation and Coordination With Others

See Appendix A, Public and Government Involvement, and Appendix B, Federal Interaction.